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Workstations'85 & Compcon'86
IEEE Computer Society
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SILICON GULCH GAZETTE

October, 1985 | IEEE Computer Society Workstations'85 & Compcon'86 | Issue No. 42

Color or monochrome flat-screen display is 5-inches thick by 35-inches diagonally and accepts standard computer or television input, shown here with Lucitron's V.P. Alan Sobel (left) and Pres. Joseph Markin.

1st International Workstations Conference Discusses Designs, Features, Futures

November 11th to 14th in San Jose's Red Lion Inn, workstation designers, analysts and users will gather for the nation's first technical conference focusing on state-of-the-art developments in workstations.

These unusually sophisticated desktop systems illustrate some of the best features in store for computer users' futures. Unusually easy-to-use workstations will be detailed — applied to everything from exotic text manipulation and color graphics processing, to voice communications and secure networking, to robotics and VLSI design and general creativity aids.

Designers will discuss everything from the newest in windowing techniques and display architectures, to humane user interfaces, to realistic ways of evaluating workstation utility and value.

The conference is sponsored and organized by the IEEE Computer Society, the largest organization of computer professionals in the world. Complete program details and registration information appears in the centerfold of this issue.

Researchers Advance in Large-Scale Flat Panel Display

Research engineers at Lucitron, Inc., have produced and demonstrated a 35-inch diagonal video display panel only five inches in depth. The display's four square feet of viewing area will show computer-generated legends and images, TV pictures or information from any other electronic source. Although the demonstration unit is in monochrome, full color is scheduled to become available in 1986.

Future Models will have a depth of only three inches and will weigh only 30 pounds — a practical 35-inch diagonal video display panel that can be hung on the wall like a picture. First applications of the new big displays will be computer-related for such military installations as war rooms and combat information centers. Civilian markets will develop as manufacturing costs are reduced. Within five years, civilian commercial sales may constitute two-thirds of the company's business.

Lucitron displays can be built in sizes of six feet or more in diagonal without increasing the depth or distorting the image. Panels can be put together to create whole wals of displays, as seen in the movie, "War Games."

Lucitron displays show computer-generated graphs and alphanumerics and can be used in well-lit rooms without taking up the space required by projectors. Because they can be brighter than projectors, Lucitron panels can be seen over wider angles without requiring dimmed room lighting. A special feature will permit a lecturer or trainer to write changes into a host computer with a light pen or touch-sensitive overlay, using the panel itself as an electronic blackboard.

Another option allows part of the panel to carry pictorial material and other parts to carry computer information — for example, a large picture from a medical CAT scan with notations and comments from medical specialists.

Civilian uses include training and education, teleconferencing, management information systems, computer-aided design and manufacturing, and electronic signs.

The Lucitron display uses a new technology invented by DeJule, in which a gas discharge is manipulated to provide a source of electrons. This source is scanned over the area of the display and electrons are extracted from it. The electrons are then modulated and accelerated to produce light from phosphors like those in TV picture tubes.

The scanning and modulation is controlled by an array of electrodes, in which each element of the array produces a tiny segment of the total picture. The present 35-inch diagonal display contains 90,112 such segments, each the equivalent of a tiny cathode ray tube.

By enlarging the panel and adding elements to the array, and by putting the elements closer together, more information can be incorporated into the image. Conventional display tubes and projectors can only magnify the picture with larger screens without reproducing any additional information.

Lucitron's panel displays images on a flat glass plate, offering a wide angle of undistorted visibility. By virtue of the new technology, corners of the picture are equal in brightness and clarity to its center.

Internally braced, the panel will be light in weight — only six and one half pounds for each square foot of viewing area. This compares with 35 pounds per square foot of viewing area for a 35-inch picture tube with a depth of 30 inches, proposed by another company.

Prices for a four square foot full-color panel may average $4,000 by 1990, due to projected increasing sales. Plans are to ship eight big-screen displays in the next 12 months, increasing to about 40 in 1986-87 and to more than 2,000 by 1988-89.

To obtain additional information regarding the display, contact: Lucitron, Inc., 1918 Raymond Dr., Northbrook IL 60062 (312)564-8383.

Don't miss Compcon'86, Mar. 3-6

Test Data Generator for Unix and Dos

Software Research Associates (SRA) has announced availability of its TDGen Test Data Generator system. The TDGen system simplifies writing files of test data and provides a very flexible method for permitting use of random and sequential generation schemes for test data creation. In addition, TDGen is able to work in multiple stages (including on its own output), a fact that considerably enhances the system's power.

TDGen adds a new dimension to the construction of systematic test data in a Unix context. Writing complex test files for an application is done with efficient. Only one file definition file and more ease and efficiency. With only one file definition file and a companion value file literally millions of variations of the input file may be generated — no two tests alike, but each one the right format. Octal or Hexadecimal conversion of decimal values may be user specified, and system calls can also be executed under TDGen control.

TDGen is intended to be used by programmers, software testers, system analysts, and others involved in generating large and complex collections of test data. TDGen applications have included developing synthetic programs, creation of stress tests for applications packages, generation of lengthy syntax checking files, and systematic checkout of user packages.

Details are available directly from SRA at: 580 Market St, San Francisco CA 94104 (415)957-1441.

Blurred Visions

by Jim Warren

This garulous gamboling presents playful prattle for the possible enlightment of the semi-idle reader.

George's Chip-off the Old Block

The Oasis User's Group newsletter tells of George Morrow running a "Chip-off." He reportedly ran the same (unidentified) benchmark on a Kaypro II, an Apple IIe, an IBM PC, a PC/XT and a Mac. The winners were Kaypro, followed by the Apple, then the PC/XT — the latter being half as fast at the Kaypro II.

The Oasis Users' Group is at Box 2400, Santa Barbara CA 93120.

Go to the WELL for More

The Whole Earth Lectronic Link — WELL — is offering a 12-port regional teleconferencing system, running on a VAX 750 in Sausalito (could *that* be the mysterous houseboat hum?). Its software is PicoSpan from Ann Arbor's Network Technologies, running under UNIX 4.2 BSD.

According to Sysop Matthew McClure, "The WELL is a low-cost system that provides the advantages of the high-priced spread: telcconferencing, electronic mail, database services, binary file transfer," ... and the all-important games. The prices verify his hypothesis — $8/month plus $2/online-hour at 1200-2400 baud.

Bay area-oriented telecon bulletin boards include Legal, Garage, Medical Games, Movies, Music, Photography, Politics, Sci Fi, Education, etc. They even

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Don't Miss the IEEE Computer Society's

1st International Conference on COMPUTER WORKSTATIONS

November 11-14, 1985
Red Lion Inn
San Jose, California

Conference details & registration information inside

a Workstations'85 keynote

The [Mis]Use of People in Computing

IBM-Yorktown's manager of Productivity and Technology Transfer, Walter Doherty, will join Convergent's Ben Wegbreit in keynoting the 1st International Workstations Conference in San Jose on November 12th.

"IBM's T. J. Watson Research Center has experienced a 20-times increase in the past ten years in the amount of time its people spend using computers interactively in their work," notes Doherty. That's twice the penetration-rate of television in the '50's. Computers are expected to penetrate industry to a similar degree within the next decade. It will be a major departure from traditional data processing.

Doherty will discuss the impediments and consequences of these changes, with emphasis on the human requirements from such new computing environments.

Blurred Visions

continued from page 1

include Spirituality, Human Resources, and Women in Telecommunications. And, of course, there are endless boards for techno-junkies — IBM PC, Mac, Commodore, Spreadsheets, Unix, AI, CP/M, Packet Radio, etc.

Joining's easy — computer-dial (415)332-6106, wait for the login prompt, type **newuser**, and press **return**. Their voice-phone is (415)332-4335.

Examiner Well

Furthermore, *San Francisco Examiner* journalist J. E. Ferrell has set up WELL-based *Ex*-access for those wishing to comment on *Examiner* stories, send letters to the editor, or "write" to individual reporters. (Considering the 4", average-height, stack of product announcements we receive, daily — even after being almost out of print for two years — one wonders how long Ferrill's worthy experiment will survive, once p.r. hacks discover its utility.)

A Phone-Phreaking Columnist

A few months ago, *San Francisco Chronicle* columnist Joseph Kraft wrote a blistering article complaining about the Ma Bell breakup. Said he, "Years, nay centuries, from now men will scratch their heads and wonder by what crazy chain of circumstance the normally sensible American people allowed the best communications system in the world to be scrapped."

Let's review: AT&T was the system that refused to allow any "foreign" — meaning other-than-Bell — equipment to be connected to their monopoly. This primarily concerned those modem manufacturers who had the audacity to offer more capability and charge less for it. Monopolies inherently have little incentive to minimize price or maximize services or capabilities.

When forced by court order to permit foreign connections, Sweet Ma Bell next demanded that such connections be made through a Bell-rented connection box — reasoning that no one except AT&T engineers could be trusted to design a telecom unit that would not endanger the phone system. Rental of such interconnect boxes also just happened to inform Big Ma of each potential customer for Bell-made add-ons, but surely Bell's sales force would never use such insider information.

Long before the final breakup, using court-made cracks in Bell's monopoly, independent long-line companies began to offer long-distance service at rates cheaper than Benevolent Bell. Now, we have a variety of such services, plus numerous equipment alternatives that, somehow, AT&T never quite got around to offering when it faced no competition.

There has been a considerable increase in alternatives, but the basic services have shown essentially no degradation from those previously offered by "the best communications system in the world." That it is the best, is no reason to avoid aggressively seeking to make it better.

Competition always brings some amount of chaos to the consumers' marketplace. Personally, I prefer to call it, "choice."

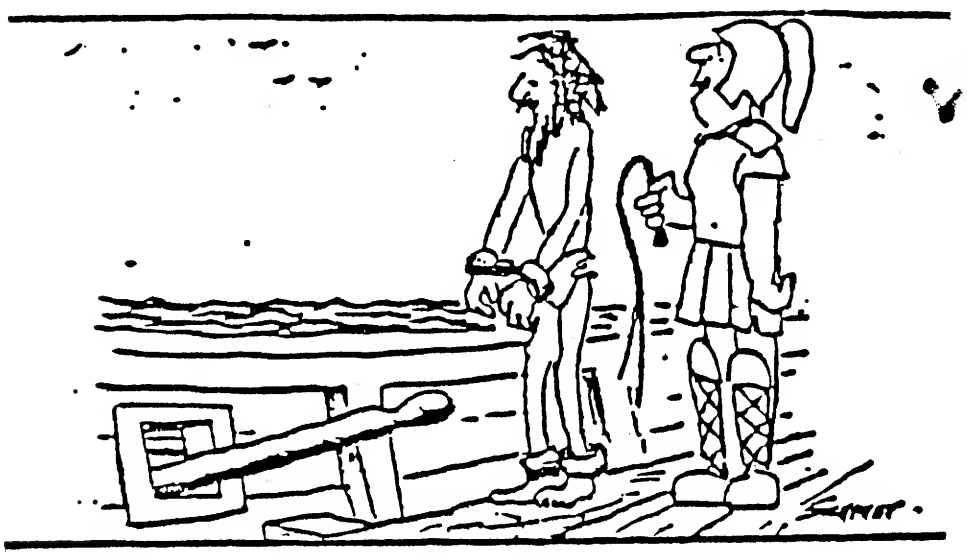
Microsoft MacMarket Monopoly?

In case you missed John Markoff's excellent *San Francisco Chronicle* article, please note that Apple reportedly will not be releasing its much-better MacBasic. Apparently this is partially due to pressure from Microsoft, eager to protect its $5M/year market for a half-as-fast Microsoft MacBasic.

Markoff quotes Steve Jasik, a Mac software developer from Jasik Designs in Menlo Park as saying Apple's unreleased MacBasic "was a fantastic version ... It's a shame that they dropped it." Furthermore, Microsoft has bought rights to key code sections, presumably blocking Apple from ever releasing their warp-speed Basic for the Mac.

The article says that Microsoft used the lever of its about-to-expire license that permitted Apple to put Microsoft Basic in the Apple II ROM to block the Apple version. Apple wanted to continue that agreement — which cost $20K in the late '70's — allowing them to continue offering a key component of the Apple II financial mainstay.

continued on page 6



"It's Called a "Workstation."'

Video Capture System Now Available for a PC

A PC-EYE family of 1024 x 1024 x 8 bit resolution video capture cards and systems is available from Chorus Data Systems, Inc., Merrimack, New Hampshire.

The PC-1400 Video Digitizer is a printed circuit card which plugs into a single expansion slot on the IBM PC, PC-XT, or PC-AT. It comes with utility software including disc store/-recall, image compression, and control of all programmable functions. Support is available for most programming languages. Compatible 800-line (CA-1700), and 1000-line (CA-1750) 1" Newvicon cameras are are available.

The PC-1500 System including a PC-1400 and, CA-1700 or CA-1750 is for applications in medical imaging, text and drawing capture, high resolution graphic arts, and machine vision inspection. It has four multiplexed input channels, a real-time monitor channel, and programmable gain, offset, and capture window. The 10 MHz full-bandwidth input and 20 MHz sample rate ensure 1024 horizontal pixels at 15.75 KHz scan frequencies. Four-way vertical interleaving provides 1024 vertical lines.

A full-screen can be digitized at 8-bits per pixel in approximately 1.8 seconds. Speed is limited by the PC-Bus transfer rate. The quantizing is software selected at 1, 2, 4 or 8-bits per pixel. At 1-bit per pixel the time drops to less than .5 seconds.

Software support is provided for capture to system memory on the PC-AT and to the Chorus GA-1500 1024 x 1024 x 8 Graphics Display Adapter. Bank switched memory expension cards available for the PC and PC-XT may also be used.

The PC-EYE family is supported by the Halo Graphics Tool Kit and Imagepro from Media Cybernetics. This provides a user-friendly image processing environment for research and development as well as callable functions for implementation of sophisticated image enhancement routines.

Because captured files can be 1 megabyte each, the recommended system configuration is an IBM PC-AT with at least 1MB of memory. Complete stand alone image processing systems are available from Chorus Data Systems, Inc.

The PC-EYE Model 1500 800-line system is priced at $4500. The Model 1550 1000-line system is priced at $6000. Both are available with 2 to 4 weeks delivery. The GA-1500 Graphics Display Adapter is priced at $5,000 and has four weeks delivery.

Complete professional image processing workstations based on the IBM PC-AT are priced at $25,000 for the 800-line system and $27,000 for the 1000line system. Delivery is 4 to 6 weeks.

For further information contact Bruce Monk, Vice President of Marketing, at 1-800-OCHORUS or (603)424-2900.

THE C LIBRARY

Osborne/McGraw-Hill announces the release of the new book The C Library, by Kris Jamsa.

Experienced C programmers can implement more effective programs with the extensive variety of programming tools found in The C Library.

Over 125 carefully structured routines ranging from macros to UNIX utilities are provided.

Jamsa discusses constants, string manipluation routines, pointers and their use in string manipulation, as well as several array manipulation routines.

The C Library also explains user interface and the development of good I/O routines, examines recursion and how it can be used to simplify difficult programming tasks, and introduces sorting — the bubble, Shell, and quick sort algorithms. In addition, readers will learn about the UNIX pipe and develop routines to support it.

Workstations'85 session

ROBOT SIMULATOR FROM CANADA

A robotics simulation workstation that allows the manipulation of 3-D objects, interactive robot programming and viewing the results of robot simulation is being developed by the National Research Council of Canada.

The system is called Adagio. It is based on the Harmony O/S, a multitasking, multiprocessor message-passing operating system. Adagio's user interface management system is based on a switchboard model of input. It encourages the application programmer to make extensive use of parallel input, that is, having several input devices simultaneously ready to accept user control.

Adagio will be discussed Wednesday Nov. 13, at 9 a.m. at the First International Conference on Computer Workstations. "Adagio, a Robotics Multitasking Multiprocessor Workstation," will be presented by Peter Tanner, Marceli Wein, W. Morven Gentleman, Stephen MacKay, and Darlene Stewart of the National Research Council of Canada.

Convert Single-User dBASE to Multi-User TurboDOS

Martian Technologies announces d/MULTI, a true file and record locking multiuser dBASE II. It's not actually a new dBASE II, it converts your existing dBASE II from single user to TurboDOS multiuser. In the process adding dBASE like commands to handle the multiuser functions. Single user applications will run as usual by turning off the multiuser functions.

d/MULTI is a software extension of Ashton-Tate's Single User dBASE II Relational Data Base Manager. It allows users of the TurboDOS Operating System to share and update standard dBASE II data base and index files in real time. It provides a simple method of building interactive multiuser dBASE II applications such as real time inventory control, and invoice data entry. d/MULTI allows interactive real time keyboard commands, making the debugging of programs very easy. No PEEK, POKE or CALL commands are needed with this package. The assembly language functions are still available if you wish to use them.

A run time package for d/MULTI developers to protect their code is also available. d/MULTI is currently available for 8-bit systems only. If running on 8-bit slaves (Z-80 based

USING TURBO PASCAL

Osborne/McGraw-Hill announces the release of the new book Using Turbo Pascal, by Steve Wood.

With this guide experienced programmers can fully utilize Borland International's best-selling Turbo Pascal compler to write more efficient programs.

Wood provides thorough coverage of Pascal syntax and program design, and discusses all of Turbo Pascal's statements, functions, and operations — including version 3.0. In addition, readers are provided with information on developing practical applications and on using advanced utilities as well as special features including the Turbo Toolbox.

For both MS-DOS and CP/M computers, this complete tutorial gives readers the knowledge they need to write software that takes full advantage of Borland's exceptional compiler.

Using Turbo Pascal is available now at $19.95; Data Base Management Systems - MS-DOS: Evaluating MS-DOS Data Base Software is available at $18.95. For additional information, contact: Osborne McGraw-Hill, 2600 Tenth Street, Berkeley CA 94710 (910)366-7277.

Workstations'85 session

UNIX United Networks Many Stations

"Networking a Large Number of Workstations Using UNIX United," will examine the issues involved in using a network operating system for a student laboratory of workstations.

The advantages of using a network of workstations over the use of a mainframe will be discussed. Solutions to the issues of common resource sharing, management of file space, administration and network system performance will be explored.

These issues and more will be explored in this session on Thursday, Nov. 14, at 11 a.m. It will be presented by Murthy Devarakonda, Robert McGrath, Roy Campbell and William Kubitz of the University of Illinois at Urbana-Champaign.

First International Conference on Computer Workstations

November 11 - 14, 1985
Red Lion Inn
San Jose, California

The IEEE COMPUTER SOCIETY will sponsor the First International Conference on Computer Workstations at the **Red Lion Inn** on **November 11-14, 1985**. The theme of the Conference is advanced computer workstations and it represents the first time that such a diverse collection of workstation technologies and vendors has been brought together under one roof.

The Conference will include technical seminars, invited papers and vendor presentations covering all aspects of computer workstation technology. Some of the topics to be covered include: specialized **software** environments, RISC workstation architectures, developments in **networking** facilities, and **AI-Expert** workstations. The presentations at this Conference will provide an outstanding opportunity for attendees from both the research community and the commercial world to learn about the current state of workstation technology and its future directions.

Opening day will include **4 Tutorial Sessions** on Monday, November 11. The following three days will include various panel discussions, invited speakers and vendor presentations. Closing sessions will be followed by a **Banquet Dinner** on Thursday, November 14.

Panel Chairmen include:

Ben Wegbreit - CONVERGENT *Keynote Address.*

Mike Price - VALID
"Low-cost Engineering Workstations"

Pat Mantey - U.C. Santa Cruz
"A Role for Minicomputers?"

Chong Lee - METHEUS
"Graphics on Unix Workstations"

David Kasik - BOEING
"User Interfaces"

Registration & General Information:

NOTE: The registration deadline is **October 25.**

Conference Registration
Members: $165
Non-members: $205
Full-time students: $50

Late/Door Registration
Members: $190
Non-members: $235
Full-time students: $50

Tutorial Registration
Members: $125
Non-members: $155

Late/Door Registration
Members: $150
Non-members: $190

For further information about registration or general aspects of the Conference contact either:

Dr. Robert Long
(Registration)
Lawrence Livermore Laboratory
L-130, P. O. Box 808
Livermore, CA 94550
(415)422-8934

Dr. Edward Miller
(General Chairman)
Software Research Inc.
580 Market Street
San Francisco, CA 94104
(415)957-1441

IEEE COMPUTER SOCIETY

Transport and Accommodation:

The **Red Lion Inn** is located at 2050 Gateway Place in San Jose. From the **San Jose Airport**, use the *free* shuttle service available from the "RED LION INN TELEPHONE" in the Baggage Claim area. From **San Francisco International**, the "AIRPORT CONNECTION" is available for a small fee by calling **(408)730-5555**. Rates at the Red Lion Inn (for reservations made prior to **October 21**) are; Single: $95, Double: $105. Call **(408)279-0600** for reservations.

Workstations'85 session

ARE FRAME-BUFFERS WORTH IT?

Cost and performance implications of machines with frame buffers resident in main memory will be discussed in detail by Robert P. Colwell of Carnegie-Mellon University and Perq Systems Corporation.

There are two styles of bit-mapped-display workstation system architectures — those with the display frame buffers in main memory (frame buffer resident), and those with separate frame buffer memories. Frame-buffer resident machines must provide enough memory, with large enough memory bandwidth, to meet the demands of the displays as well as to maintain satisfactory CPU performance.

"The cost and complexity of a frame-buffer resident machine simultaneously driving two independent bitmapped displays is substantial," Colwell said. "A prototype of such a system has been built and tested."

"A Display Architecture for Driving Two Bitmapped Displays From One Frame Buffer," will be presented at 2 p.m. Tuesday, Nov. 12, at the First International Conference on Computer Workstations.

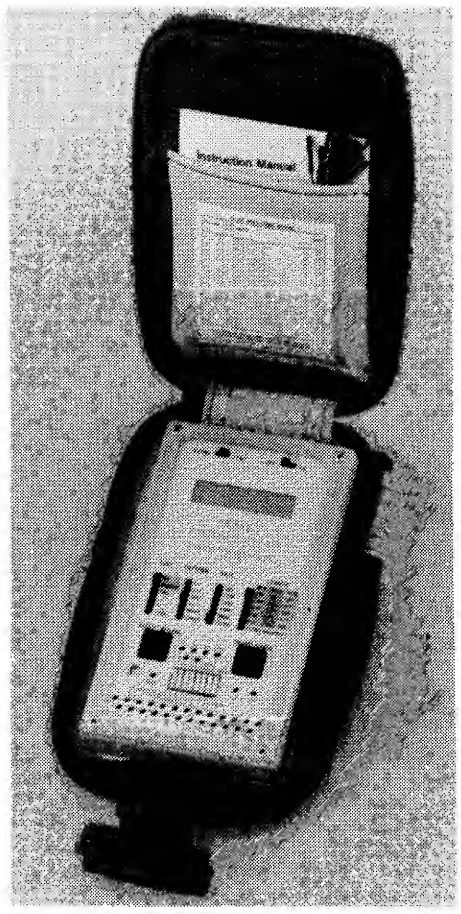
ET-1 Error Rate Test Set

Datacom Northwest announces the availability, from stock, of the ET-1 Error Rate Test Set. ET-1 has asynchronous and synchronous transmission capability. Six data rates to 19,200 kbs, six standard transmission patterns, and five selectable tests with six test lengths for each. ET-1 performs true error bit testing, block error rate testing and measurement of errored seconds.

The color coded faceplate allows easy recognition of related functional settings, plus a liquid crystal display to read test results quickly.

ET-1 provides full access to the RS232 interface and a convenient switch bank to break seven different lines to perform patching or jumpering tasks. The dual gender RS232 connector is mounted on a length of ribbon cable for quick connection to monitor or test the line.

Packaged in the strong, durable SoftPak, the ET-1 has a



lifetime guarantee. Suggested Retail Price $395. For additional information, please contact Datacom Northwest, 3303 112th St SW #100, Everett WA 98204. (206)355-0590.

Workstations'85 one-day tutorials

CAD/CAM, Nets, Human Factors & Graphics

Four one-day tutorials are being offered on Nov. 11th, the opening day of the First International Conference on Computer Workstations, in San Jose. Organized by the IEEE Computer Society, these in-depth tutorials include:

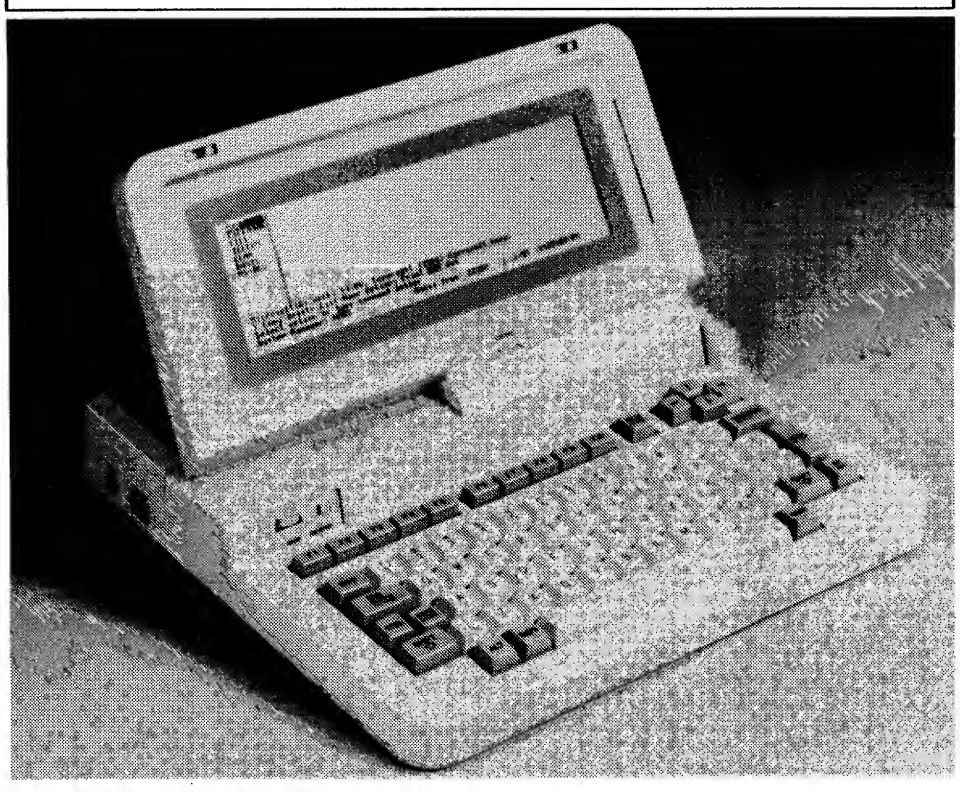
"Integrating CAD/CAM into the Organization"
CAD/CAM is a primary use of computer workstations and represents a principal method by which companies can achieve productivity and quality gains. Dr. Silvan Chasen, of Lockheed-Georgia, will focus on how the new technologies can be best implemented and utilized.

"Local Networks: Past, Present and Future"
Interconnecting groups of workstations effectively and efficiently is a key facet of successfully transfering workstation technology to office environments. Dr. Harvey Freeman, of Architecture Technology Corporation, will discuss the details.

"The Human Factors Interface"
Dr. Jack Grimes will focus on design methods that result in workable interfaces between the user and the workstation, based on Grimes' wealth of practical experience in the field. Dr. Grimes was formerly with Tektronix and ITT, and is now with Intel Corporation.

"Technology Trends in Computer Graphics"
The present and future of integrated computer workstations will be detailed by Dr. Carl Machover, President of Machover Associates.

Registration may be completed for these tutorials by using the form found in the centerfold of this issue.



Heath Laptop Computer Features Microsoft Works

Heath Company has announced that a laptop computer is now available. The portable ZP-150 Computer is a diskless unit which is being offered as a fully assembled computer product and is available for immediate delivery through Heath Company and 64 Heath/Zenith Computers & Electronics stores nationwide.

The unit weighs 7.7 pounds and has an LCD (Liquid Crystal Display) screen built in to its flip top. It is the first laptop to incorporate Microsoft WORKS, a ROM-based software package developed by Microsoft Corporation. WORKS is compatible with MS-DOS machines. The ZP-150 has 224 kilobytes of ROM and 32 kilobytes RAM user memory which is expandable to 416 kilobytes.

Built into WORKS are several business programs, including PLAN, a subset of Microsoft's MultiPlan; WORD, a subset of the powerful word processor WORD by Microsoft; FILE, a Data Base Management System (DBMS); CALENDAR, an appointment secretary; TELCOM, a new telecommunications program complete with autodialing capability; and BASIC, a large subset of the popular programming language GW-BASIC.

WORKS was designed by Microsoft to be a user-friendly system for use in portable computers. Because the business person would rather concentrate on his information rather than learning how to operate a small computer, WORKS keeps the learning process at a minimum, allowing the user to be productive almost-immediately.

In addition to the ROM-based business software, the ZP-150 has a parallel printer port, an RS-232 serial port, an audio cassette player port, and a telephone jack to be used with the internal 300 baud modem.

The ZP-150 is powered by ten AA alkaline batteries which will operate the unit for 8-10 hours.

CONSUMERS UNION NEWS DIGEST

Consumers Union News Digest is NewsNet's first newsletter specializing in the consumer marketplace. NewsNet is the nation's largest distributor of specialized business newsletter information.

Consumers Union News Digest, published since 1976, contains abstracts of news and information on consumer issues and trends published in over 150 newspapers, magazines, trade journals, and industry and government reports.

In addition to a one-paragraph abstract, each item lists the article's author and complete source information, including the name of the publication, the date, and page numbers. Topics covered range from advertising to taxes and from electronics to health and medicine.

This semi-monthly publication is prepared by the library staff of Consumer Reports Magazine and published by Consumers Union of United States, Inc., Mount Vernon, NY.

For further information, call Marcia Cheetham at (800)345-1301, or (215)527-8030.

Workstations'85 session

Data & Voice Scrambled for Telecom

The design of a protocol architecture for an integrated, encrypted voice and data workstation accessing a packet switched network will be explored in "Encrypted Data and Voice Communications in a Packet Switched Network," at the First International Conference on Computer Workstations.

The session will examine the design process of a secure integrated voice and data workstation which uses a packet-switched network as a communications medium. The design process is described in terms of the International Standards Organization Open System Interconnection (ISO OSI) reference model and includes the choice of which layer is most suitable for the encryption and which protocol functions in the lower layers are needed to effectively support traffic from such workstations.

The session will be presented by Dr. William Kelly, Charles Oestereicher, and Dinakar Gan of Computer Sciences Corporation at 11 a.m. on Wednesday, November 13.

Silicon Gulch Gazette
microcomputing's first news[?]paper, established in 1977

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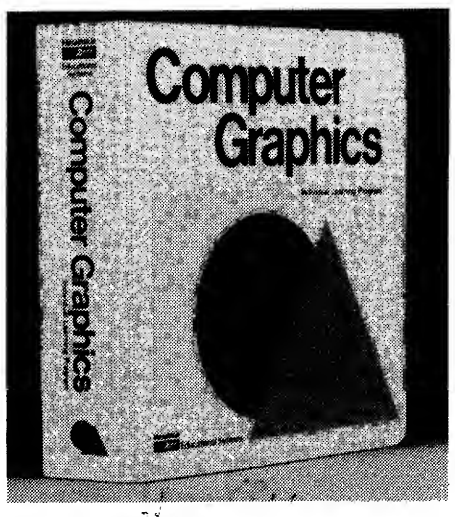
This ribald rag is published on a round-tuit basis — whenever the editor chooses to produce it and someone chooses to underwrite it.
The current issue was produced to provide promotion and information about the IEEE's Workstations and Compcon Conferences, in a more-palatable form than the usual promo-only brochures. It was produced and distributed — essentially at cost — by Jim Warren, a long-time member of the Compcon Program Committee.
Previous issues were underwritten by Computer Faire through 1983, and more recently by Autodesk and Applied i — who recognized that, although there are no free lunches, it is worthwhile to offer an inexpensive, tasty sandwich-for-the-mind.
Editorial content of all issues is entirely under control of the editor, and opinions of the editor are entirely his own. Issue underwriters did not purchase those opinions — and should not be blamed for them.
For a free "subscription" — worth at least what you pay for it — send name and U.S. mailing address to "SGG Subscription", 345 Swett Rd., Woodside CA 94062 — and you'll never escape the mailing list.

HIGH RESOLUTION GRAPHICS COURSE



An educational course, "High Resolution Graphics", is now being offered by Heathkit/Zenith Educational Systems. The EC-3000 Graphics Course instructs the novice on how to create high quality computer graphics using a home computer with graphics capability. A disk with program examples is provided for use with the H/Z-100 series computers.

The course is divided into twelve segments which teach subjects ranging from computer graphics terminology to simple animation techniques to careers in computer graphic programming. Some knowledge of BASIC is helpful but not required. The subjects covered include photographing the video display, using statements such as PUT, GET and LOCATE, the Graphics Macro language, and Human Factors in Graphics. At the end of each section, the student is then given the opportunity to reinforce new and familiar material with projects that provide "hands-on" experience.

The EC-3000 High Resolution Graphics course is just part of a full line of Heathkit/-Zenith educational products. For more information write Heath Company, Dept. 570-505, Benton Harbor MI 49022 (616)982-3984.

Workstations'85 session

HOW ABOUT AN EASY, GENERALIZED EDITOR?

Creating a user interface that can be made both uniform and easy to use will be examined in "An Approach to Generalized Editing," at the First International Conference on Computer Workstations.

A survey of commercial programs has shown that user interaction consumed 40-60 percent of the source text in the programs sampled. In traditional interactive programming systems, each application program individually manages its interaction with the human user. The result is duplication of effort in implementing user interface code, and non-uniform input conventions.

Researchers have proposed presenting all user interaction in terms of editing. Deleting or renaming files can be presented as editing a directory, and machine language programming can be presented as editing the internal state of a virtual machine. However, existing editors are not particularly well-suited to this task. In this session, Prasun Dewan and Marvin Solomon will propose a new approach to bridging the gap between the user and the application — between editing and computing.

This session is scheduled to be presented at 9 a.m. Wednesday, Nov. 13, by Dewan and Solomon of the University of Wisconsin-Madison.

From Star Wars to the Silicon Valley Slump — Compcon'86 Will Cover Computer Pros' Interests

Compcon'86 — in San Francisco, March 3-6 — will be the IEEE Computer Society's only 1986 conference that provides coverage of most major areas of interest to computer professionals. Since the late '60's, Compcon has been one of the few opportunities the Society has offered to reach beyond one's immediate specialty, have face-to-face meetings with the leaders in many areas of computing, and keep up with the broad range of developments in computer science and engineering.

Compcon'86 continues this history. Plans are now being completed for technical sessions ranging from a comparison of US and Japan software practices, and software architectures for AI applications, to CAD/CAM databases, and mass data distribution via radio and cable broadcasting.

As a first-time event, west of New England, Compcon'86 will also include a balanced presentation of the technical issues surrounding computing for the Strategic Defense Initiative — the so-called "Star Wars" defense. This will feature two speakers from the Department of Defense's SDI Panel, and two speakers who have questioned the technical feasibility of its computing requirements. (This will *not* be a discussion of the social, political or ethical issues.)

Unusual Opportunity for Face-to-Face Technical Exchange

Aside from the technical sessions, and a first-time series of hands-on demonstrations, Compcon is organized to encourage opportunities for informal, one-on-one information swapping. There are breaks between the technical sessions, two later-afternoon wine-and-buffet hours, and ample lobby seating for informal gatherings.

Cross-Fertilization Enhances Professional & Corporate Growth

It is easy to bury one's professional head in the sand of the current project — with the potential long-range consequences inherent in head-burying. Compcon offers a unique opportunity to reach beyond one's project and one's company — to keep pace with state-of-the-art developments in other companies and other areas of computing.

For complete details of Compcon'86, write or call:

Compcon'86, c/o Dr. Glen Langdon, General Chairman
IBM, Dept. K54/282
5600 Cottle Rd., San Jose, CA 95193
(415)256-6454

How to Sell Your Personal Computer Software

Associated Technology announces a book for the success oriented professional titled "How to Sell Your Personal Computer Software."

The manual tells how to obtain national directory listings, how to price a new software product, how to locate and qualify a new advertiser, how to write a users manual and how to operate a successful mail order fulfillment service.

The manual guides budding entrepreneurs through the maze of information needs which can limit the exposure of innovative software products.

The manual cost $22 from ATC, Route 2 Box 448, Estill Springs TN 37220 (615)967-9159 x 429.

MAC-XPERIMENTING WITH NETWORKS

A computer network laboratory using Apple Macintosh's to demonstrate and experiment with advanced protocol architectures will be described in "Using Workstations to Investigate Computer Networks," at the First International Conference on Computer Workstations.

Restrictions imposed by the use of mainframes in educational institutions can thwart the demonstration of many concepts in computer science and computer engineering. The introduction of workstations can offer significant improvements in teaching the practical aspects of computer science.

The session will be presented by Mark Sherman and Ann Marks of Dartmouth College. It is scheduled for 9 a.m. Thursday, Nov. 14.

Workstations'85 session

BENCHMARKING GRAPHICS UNITS

A graphical workstation should be a productivity tool to benefit its user. Benchmarks are needed to determine whether a workstation meets this criteria or is JAWS (Just Another WorkStation).

Benchmarks focusing on scientific and engineering graphical workstations connected with mainframe computers are being developed by Bruce Eric Brown of The Quail Group and Robert L. Judd of Lawrence Livermore National Laboratory. They will discuss their work in "Benchmarking Graphical Workstations," at the First International Conference on Computer Workstations. The session takes place Wednesday, Nov. 13, at 11 a.m.

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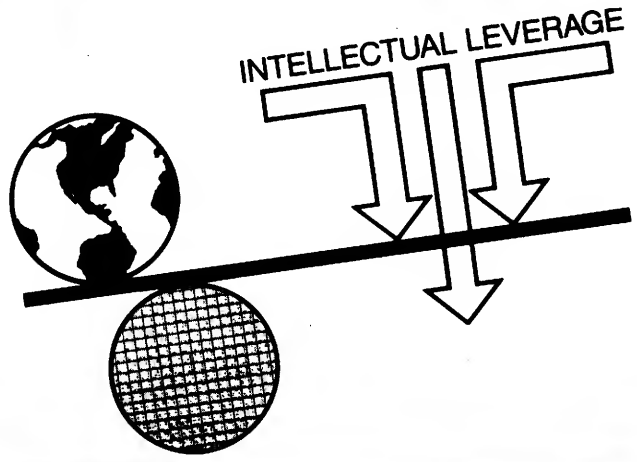

Compcon Spring 86 will explore the leading-edge developments across the full computer hardware, software, and networks spectrum. The audience will be treated to a broad-based technical update by leading technical experts and developers.

MARCH 3–6, 1986
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FOR FURTHER INFORMATION:

General Chairman Glen G. Langdon, Jr.
IBM Dept. K54/282
5600 Cottle Road
San Jose, CA 95193
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Program Chairman Alan G. Bell
Xerox Palo Alto Research Center
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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Workstations'85 session

Lowcost Realistic Images Via Parallel Processing

The design of a low cost parallel processor created to bring about fast and realistic image rendition in a workstation environment will be described at the First International Conference on Computer Workstations.

The initial design of a parallel processor for performing graphics algorithms on a scanline by scanline basis will be discussed. The system consists of several identical signal processor chips controlled by a master processor. The slave processors are assigned to disjoint screen extents divided along the direction of the scan, and independently render a scanline within their extents. A system containing six slave processors fits onto just two 4"x13" PC cards and has a peak performance of 34 MIPS.

"The Shading Engine — A Low Cost Parallel Processor for Rendering High Quality Color Images in Graphics Workstations," is scheduled for 2 p.m. Tuesday, Nov. 12. It will be presented by K. C. Nunan, A. G. Lean, and C. P. Wang of IBM T. J. Watson Research Center.

INFORMATION SECURITY RESOURCE OFFERED

Computer Security Issues and Answers, a 24-page magazine supplement containing eight pages of articles on various aspects of information protection, is being offered free by Computer Security Institute (CSI). This publication is sponsored by CSI to advance the view that information is a critical organizational asset and must be protected. Authors include FBI Director William H. Webster; George B. Trubow, director of the Center for Information Technology and Privacy Law, John Marshall Law School; Jerome L. Dreyer, president of ADAPSO; Howard M. Anderson, managing director of The Yankee Group; Robert L. Brotzman, director of the Department of Defense Computer Security Center; Robert H. Courtney, Jr., president of RCI; Robert Ellis Smith, publisher of Privacy Journal; and J. David Hann, president of GTE Telenet.

Requests for the supplement, together with a self-addressed 9x12 inch envelope with $.73 postage affixed, should be sent to Phyllis St. Martin, Dept. A5, Computer Security Institute, 43 Boston Post Road, Northborough MA 01532.

Silicon Compilers, Medical Graphics, Expert Systems and High-Performance Computing — Tutorials

On March 3rd, next Spring in San Francisco, Compcon'86 will open with four full-day, in-depth tutorials.

Progress in **silicon compilation**, and its practical applications, will be detailed by Dr. Dan Gajski from the University of Illinois' Computer Science Department.

Applications of **computer graphics in medicine** and design of such systems, will be discussed by Dr. Bob Langridge from the University of California's Schools of Medicine and Pharmacy in San Francisco.

A detailed **overview of expert systems** will be presented by the Rand Corporation's Henry Sowizral.

UC-Berkeley's Prof. Yale Patt will provide a full-day tutorial on **high-performance computing** — its architectural issues and solutions.

To register for these one-day tutorials, or for information on the 30-40 technical sessions scheduled for Compcon'86, March 3-6, 1986, in San Francisco, write:

Compcon'86, c/o Dr. Bob Long
Lawrence Livermore National Laboratory
P.O.Box 808, Livermore, CA 94550

JAWS MEETS ROCKY ROADS

"JAWS" — Just Another Workstation Startup — was coined to reflect the 80-100 computer workstation startups that are rumored to exist in the U.S. Rocky Roads is an evil character, known for his ability to create enough business plans to account for 300% of the market and available venture capital.

Is it too late to start yet another workstation company? Was it too late two years ago? What are the future applications for workstations? What are the limiting technologies? How will workstations be distinguished from PC's in the future?

JAWS Panel Chair, Dr. Jack Grimes

These issues will be discussed in a special evening panel session featuring leaders in the workstation area. They will talk about their experiences with "JAWS" and the changing conditions for success in computer workstations. The session will be chaired by Dr. Jack Grimes from Intel. Panelists will include, Jim Clark (Chairman, Silicon Graphics), John Doerr (Partner, Kleiner, Perkins, Caulfield and Byers), and David Liddle (Chairman, Metaphor), plus several speakers from leading workstation manufacturers.

Blurred Visions

continued from page 2

Who's the Pirate?

Does anybody remember Bill Gates' bitter letter around 1976, complaining of hobbyists ripping off software? (Gates is the co-founder of Microsoft.) The issue was piracy of Microsoft Basic, then priced at about $300 a copy — at the same time, the MITS Altair cost about $400 in kit-form, sans useful memory.

With Apple's NonMacbasic, it would appear that Microsoft — for its personal profit — is ripping off Mac owners by prohibiting access to a better Basic (ignore that the last phrase may be a contradiction of terms).

Bill is one of the few people in this industry who deserves the adjective, "brilliant" — both for his technical competency and his business ability. It's frustrating to find that I disagree with him, and it's saddening to see him use those business talents to suppress an apparently excellent product from being offered by another company. Perhaps this is a case where software piracy *is* justified.

MacMemory Lifetime Warrant

Not every MacThing is depressing, however. Supermac Technology is peddling a megabyte for Macs for $899,list — less if it upgrades a system that already has more than 128K. Furthermore, its a quick field retrofit. (They also offer a half-meg for $200, less $2.)

Now, that may or may not be interesting. What *is* interesting is that the product is guaranteed for life — exclusive of the usual things, like 220v shorts. Furthermore, the guy who created the company is the kind who backs his products without quibbling.

He's Steve Edelman, one of the more delightful folks I have known in microcomputing. He started with the industry, when it started. As a near-kid, he created Ithica Audio (New York), offering stereo-stuff. When micros came along, he began offering micro-things — and including a lifetime warranty, still unheard of in our 90-days-to-failure industry.

While he ran Ithica, it offered quality products and prompt, congenial customer service. Like so many small successes, it grew; Steve took in in-vestors; they took over ... and he moved on with a few bucks to spare.

He also moved to "the right coast" — a provincial view, but this is a west coast edition. For a few years, he toured around, lecturing in newly-capitalistic mainland China, consulting in hyper-active Hong Kong, and hiking distant nations.

Now, he's back in the U.S. and has cranked up this new venture — under his unilateral control — and is showing the same enthusiasm, dedication to quality, and equitable treatment for his customers. He says that he found the cost of backing his products for a lifetime was tiny, particularly when compared to the great value he earned in customer satisfaction. More companies should exhibit comparable faith in their products, and fairness for their customers.

Of course, Supermac's mega-mem is not likely to be their last offering (Supermac, 1901 Old Middlefield Way, Mtn. View, CA 94040).

continued on page 11

AUTOCAD HANDBOOK

Inside AutoCAD is a handbook for engineers and designers interested in learning about AutoCAD, the microcomputer-aided drafting and design program. It contains step-by-step instructions with over 300 drawings explaining how to use AutoCAD, references for setting up AutoCAD to produce professional quality drawings, and practical tips on customizing AutoCAD for special uses like extracting schedules and parts lists from drawings.

If you're interested in this book, please contact Donald Gimbert at (415)332-2344.

Workstations'85 session

AN ARTIFICIAL INTELLIGENCE MACHINE

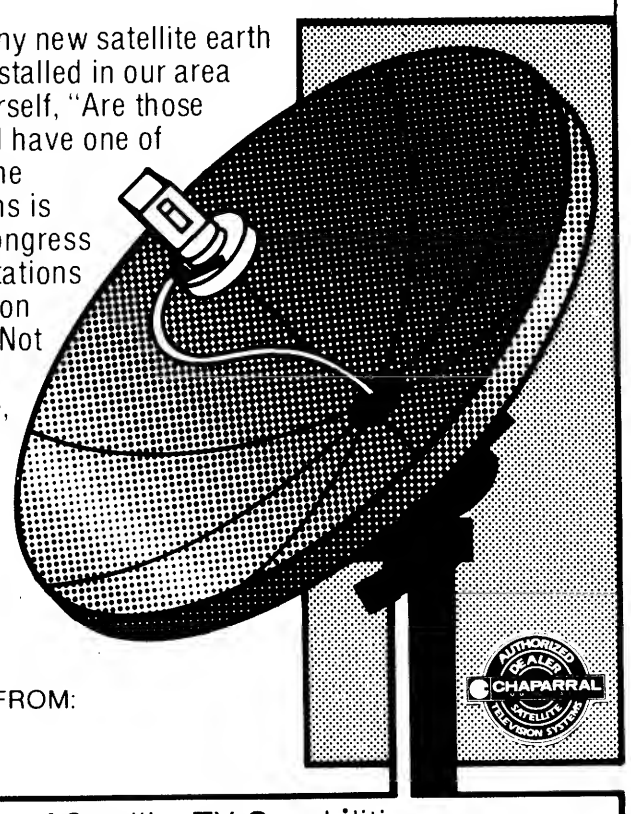
An architecture offering adequate hardware support for artificial intelligence languages is being developed by a French research project called MAIA. MAIA, a Machine for Artificial Intelligence Applications, is both a workstation for software development and a machine for executing applications that need a powerful symbolic computation support.

The software consists of an integrated environment based on Lisp. It includes a Lisp compiler and interpreter as well as Prolog compiler and interpreter. The software is based on *Common Lisp* and a kernel system which includes virtual memory management and multiprocessing. The multiprocessing system is implemented by stack groups on a Sceptre-like real time kernel.

MAIA is a joint project of the Centre National d'Etudes des Telecommunications (CNET) and Compagnie Generale d'Electricite (CGE) at Laboratoires de Marcoussis. J. P. Sansonnet, P. Clere and E. Papon of Laboratoires de Marcoussis will discuss MAIA in their presentation, "A Real Time Oriented Machine for A. I. Applications," at the First International Conference on Computer Workstations.

YES, YOU CAN!

You may have seen many new satellite earth stations, or "dishes", installed in our area recently and asked yourself, "Are those dishes legal?" or, "Can I have one of those?". Well, happily the answer to both questions is YES. In 1984, the U.S. Congress approved home earth stations designed for the reception of satellite broadcasts. Not only are dishes legal to use, they are affordable, too. You can enjoy the freedom and wide variety of satellite television today.



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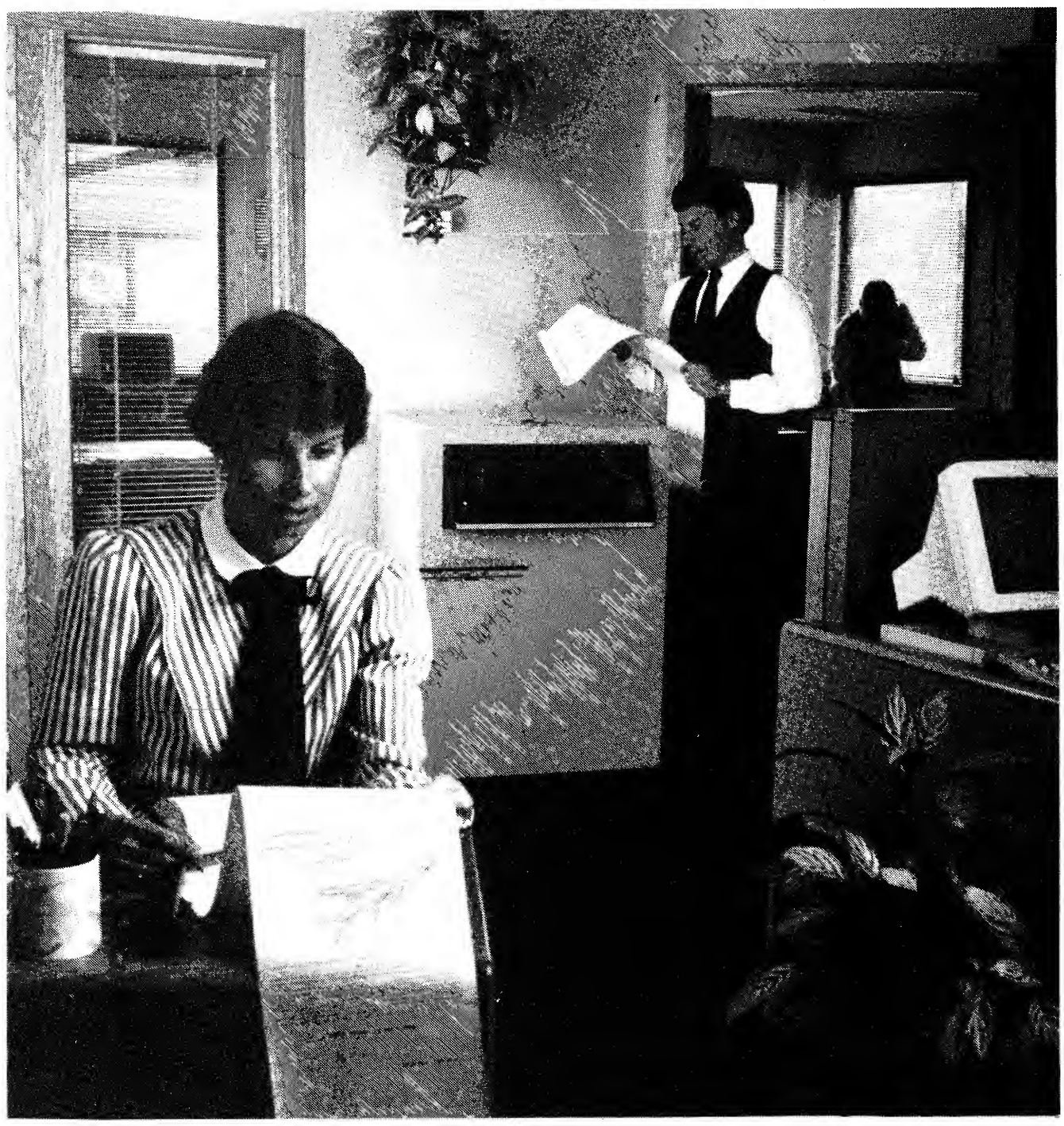

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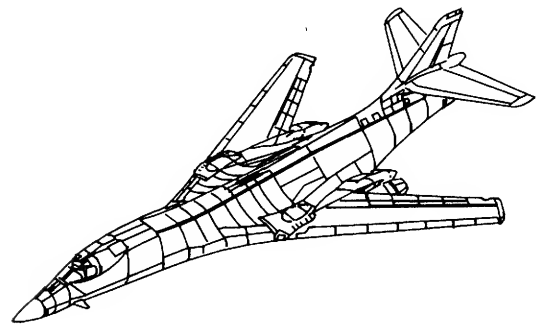

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Pre-Conference Tutorials: 9am - 5pm, Monday November 11

1. Silvan H. Chasen - LOCKHEED CORP. ***Integrating CAD/CAM Into the Organization***
CAD/CAM is a primay employer of computer workstations and represents a principal method by which companies achieve gains in productivity and quality. Dr. Chasen considers how new workstation technologies can best be used by prospective workstation purchasers.

2. Harvey Freeman - ARCHITECTURE TECH. ***Local Area Networks: Past, Present and Future***
Interconnecting groups of workstations effectively and efficiently is a key factor for the successful implementation of workstation technology in the office. Based on his valuable experience with practical LAN applications, Dr. Freeman will develop key issues and identify critical choices for LAN technology.

3. Jack Grimes - INTEL CORP. ***The Human Factors Interface***
Dr. Grimes tutorial focuses on design methods that can result in improved interfaces between the user and his workstation. The tutorial emphasizes Dr. Grimes' wealth of practical experience in this field.

4. Carl Machover - MACHOVER ASSOCIATES. ***Technology Trends in Computer Graphics***
Dr. Machover's presentation will focus on the present and future trends in computer integrated workstations.

November
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1st INTE CONF CO WORKS

Windowing Techniques Chaired by K. Lantz - Stanford University

* Constraint-based Tile Windows - E. S. Cohen, L. A. Iverson (Siemens Research and Technology Laboratory) and E. T. Smith (Carnegie-Mellon University).

* WHIM: The Window Handler and Input Manager - M. J. Goodfellow (IBM San Jose).

* Object Oriented Input Handling with RIOS - K. D. Gourley (MCT Corporation).

Display Architectures Chaired by R. Ellis - CALMA Research & Development

* A Display Architecture for Driving Two Different Bitmapped Displays from One Frame Buffer - R. P. Colwell (Carnegie-Mellon University).

* The Shading Engine: A Low-cost Parallel Processor for Rendering High Quality Color Images in Graphics Workstations - K. C. Nunan, A. G. Lean and C. P. Wang (IBM Yorktown).

* Graphics Systems - C. K. Kornfeld (AT&T Laboratories).

User Interfaces Chaired by J. Grimes - INTEL Corporation

* An Approach to Generalized Editing - P. Dewan and M. Solomon (University of Wisconsin).

* The Engineering of an Environment on Small Machines - M. V. Zelkowitz, J. Elgot, D. Itkin, B. Kowalchack and M. Maggio (IBM Yorktown).

* A Theory of Productivity in the Creative Process - J. Brady (IBM Santa Teresa).

Operating Systems & Architectures I Chaired by K. Booth - University of Waterloo

* Multitasking Support in a Graphics Workstation - K. S. Booth, W. B. Cowan and D. R. Forsey (University of Waterloo).

* Adagio: A Robotics Multitasking Multiprocessor Workstation - P. P. Tanner, M. Wein, W. M. Gentleman, S. A. McKay and D. A. Stewart (Canadian National Research Council).

* A Real-time Oriented Machine for A. I. Applications - J. P. Sansonnet, P. Clere and E. Papon (Laboratoires de Marcoussis).

Benchmarking & Performance Chaired by L. Hatfield - Lawrence Livermore National Laboratory

* Benchmarking Engineering Workstations - M. A. Linton (Stanford University).

* Benchmarking Graphical Workstations - B. E. Brown (Quail Group) and R. L. Judd (Lawrence Livermore National Laboratory).

* Logical Linking Performance Study of a Token Ring LAN - L. W. Huang (IBM Research Triangle Park).

Transport and Accommodation:

The **Red Lion Inn** is located at 2050 Gateway Place in San Jose. From the **San Jose Airport**, use the *free* shuttle service available from the "RED LION INN TELEPHONE" in the Baggage Claim area. From **San Francisco International**, the "AIRPORT CONNECTION" is available for a small fee by calling (408)730-5555. Rates at the Red Lion Inn (for reservations made prior to **October 21**) are: Single: $95, Double: $105. Call (408)279-0600 for reservations.

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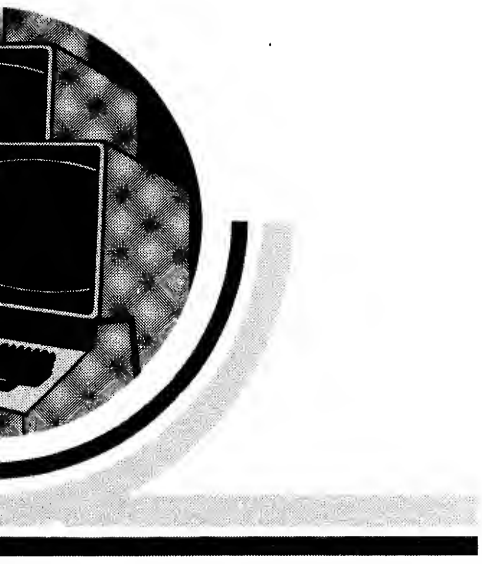

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Parallel Panel & Presentation Topics

Tuesday, Nov. 12

9:00 - 9:15	Opening Address	
9:15 - 10:30	Keynote: E. Wegbreit (Convergent) and W. Doherty (IBM Yorktown)	
11:00 - 12:30	Session: Windowing Techniques	
2:00 - 3:30	Session: Display Architectures	Panel: RISCs for Workstations
4:00 - 5:00	Vendor Presentations	Vendor Presentations

Wednesday, Nov. 13

9:00 - 10:30	Session: User Interfaces	Session: Operating Systems I
11:00 - 12:30	Session: Benchmarking	Session: Operating Systems II
2:00 - 3:30	Session: System Applications	Panel: The Apollo Environment
4:00 - late	Vendor Presentations	Vendor Presentations

Thursday, Nov. 14

9:00 - 10:30	Session: VLSI Applications	Session: Distributed Systems
11:00 - 12:30	Session: Computing Environments	Session: Workstation Architectures
	Banquet Luncheon	
2:00 - 3:30	Panel: A Role for Minicomputers?	

Operating Systems & Architectures II Chaired by R. Haskin - IBM San Jose

* The Ridge Operating System: High Performance Through Message-passing and Virtual Memory - E. Basart (Ridge Computer).

* Identifying Objects in Interactive Workstation Environments - J. Glicksman (Advanced Information and Decision Systems).

* Encrypted Data and Voice Communications in a Packet Switched Network - W. Kelly, C. Oestreicher and D. Gan (Computer Sciences Corporation).

System Applications Chaired by E. Carlson - CONVERGENT Technologies

* Voice and Telephony Applications for the Office Workstation - A. Ruiz (IBM San Jose).

* A Release-control System for a Network of Personal Workstations - D. Guise (Carnegie-Mellon University).

* A Network Architecture for an Intelligent Workstation Interface - T. Kaczmarek (Information Sciences Institute).

VLSI Applications Chaired by N. Gunther - Xerox PARC

* Conversion of an IC Design Capability form a Mainframe to a Workstation Environment - D. W. Palmer and J. A. Wisniewski (Sandia National Laboratory).

* A Distributed Workstation Approach to IC Process Characterization - N. J. Gunther (Xerox PARC).

* A Low-cost PCB Workstation - W. Schenk (Omnicad Coporation).

Distributed Systems Chaired by K. Lantz - Stanford University

* Processor Sharing in NEST: A Network of Computer Workstations - R. Agrawal and A. K. Ezzat (AT&T Laboratories).

* A Workstation-based Approach to Text Retrieval and Manipulation - L. A. Hollar (University of Utah).

* Using Workstations to Investigate Computer Networks - M. Sherman and A. Marks (Dartmouth College).

Computing Environments Chaired by R. Phillips - University of Michigan

* The Professional Workstation Project - R. H. Campbell and W. J. Kubitz (University of Illinois).

* Networking a Large Number of Workstations Using UNIX United - M. V. Devarakonda, R. E. McGrath, R. H. Campbell and W. J. Kubitz (University of Illinois).

* A Bridge from Full-function to Reduced-function Workstations - R. L. Phillips, D. E. Atkins, R. Aggarwal, N. Benovich and B. Schipper (University of Michigan).

Workstation Architectures Chaired by M. Blasgen - IBM Yorktown

* Voice/Data on the NGEN Workstation - K. Bedard, G. Harris, J. Krause and R. Lagueux (Convergent Technologies).

* The SM90 Workstation - J. F. Abramatic (INRIA).

* The Realization and Application of an Intelligent GKS Workstation - R. G. Spiers (Sigmex).

JIM WARREN SEEKS JUNIOR COLLEGE TRUSTEE SEAT

A Peninsula community college district may soon have one of the Bay area's better-known computer professionals helping to guide its instructional policy and innovative community services for the remainder of the decade.

Gazette editor/publisher Jim Warren is one of four candidates running for two openings on the San Mateo County Community College District's five-member Board. Voters will choose the new Trustees in the November 5th elections.

Long Record of Innovation & Community Service

Aside from founding the *SGG* as micro-computing's first free newspaper[?], Warren also founded the West Coast Computer Faires, and created the first weekly subscription newspaper for micros — which later became *Infoworld*.

He was the founding Editor of *Dr. Dobb's Journal*, giving it a strong consumer advocacy bent, and hosted the "Computer Chronicles" TV series for its first two seasons — the nation's first weekly computer show, initially carried on over 40 PBS and ETV stations. He also created Video Initiative, producing videotape tutorials on microcomputing topics, and proposed a system for broadcast-based mass information distribution for the general public, back in 1978.

He has served on the Compcon Program Committee for some years, Chaired the First Personal Computer Festival for the 1978 National Computer Conference, Chaired local Assocation for Computing Machiner and SIGMICRO Chapters, and was Editor of the Bay area ACM's *Bit Dropper* for several years.

Would be Board's Only Technical Professional

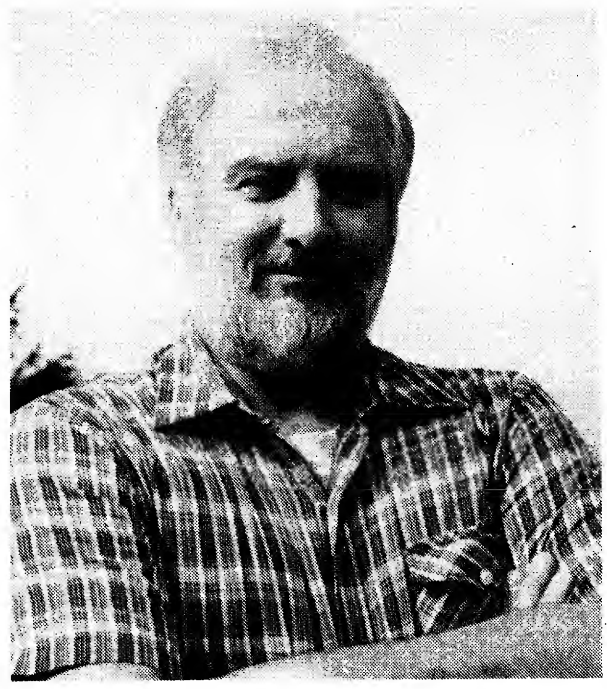
Although the district serves the north end of "Silicon Valley" and has an obvious interest in technical education, only Trustee Jim Rudolph is a technologist, and he is retiring after the elections. Warren and Rudolph have worked together on the IEEE Computer Society's Compcon conferences for several years, and it was Rudolph's repeated encouragement that prompted Warren to run.

None of the other three candidates are technologists. However, the Board will soon face major decisions regarding technical training, administrative computing, and redirection of the district's KCSM TV and FM stations — including several proposals for data transmission.

Only One with Decade's Teaching Experience

Warren has been a computer programmer, consultant and lecturer since the late '60's. He taught computing at Stanford, San Jose State, San Francisco State and De Anza Junior College — as well as presenting courses for several years over Stanford's CCTV network, operated by the School of Engineering.

From 1957 to 1967, Warren taught high school and college mathematics. His last math position was as Chair of the Mathematics Department for the College of Notre Dame-Belmont. He served



two terms as Chair of the South Texas ("Alamo District") Math Council, and created four free, semester-long professional programs earning the Council national recognition.

In the late '60's, he served three terms as General Secretary of the Midpeninsula Free University. He has also been President of several community organizations, and has recently been active in seeking local community control over local community issues.

Issues: Cost-Effective Technical Operations, Non-Tax-based Revenues, Academic Quality, Responsive Community/Industry Services

Warren wants to assure that computing and broadcasting services are cost-effective — preferably income-producing. He feels there are numerous opportunities for generating voluntary (not tax-based) funding through these and other sources; he is strongly disinclined to seek tax-income beyond what is already provided.

Assuring academic quality comparable to the first two years of major four-year institutions is of special interest. He also feels there are important policy issues posed by an aging faculty, many of whom are about to retire.

He is particularly interested in expanding programs that serve identified needs of the community, and local business and industry — on a self-supporting basis.

Members of the Workstations'85 and Compcon'86 publicity committees felt it fair to allow this larger-than-usual coverage of Warren's candidacy, given that he is essentially donating his services to create this Gazette publicizing these IEEE Computer Society projects.

Workstations'85 session

A HIGH-PERFORMANCE UNIX SYSTEM

"The Ridge Operating System: High Performance Through Message-Passing and Virtual Memory," will be presented by Ed Basart of Ridge Computers at the First International Conference of Computer Workstations.

The Ridge operating system is decomposed into processes, and relies on message-passing for its interprocess communication.

"The challenge was to provide a high-performance UNIX implementation in this environment," said Basart. "The technique used was to blend in other operating facilities, such as virtual memory, with the message system. Key aspects of the design were to minimize the number of primitives and provide architectural support from the Ridge instruction set architecture."

The session is scheduled for 11 a.m. Wednesday, Nov. 13.

Workstations'85 session

NGEN COMBINES VOICE & DATA

The integration of voice and data functions into Convergent Technologies' NGEN family of office workstations will be the topic of discussion in "Voice/Data on the NGEN Workstation".

The voice and data functions, used for telephony, mail and voice annotation applications, are created by the addition of hardware and software that provide switching, voice, and data interfaces among one or two switched telephone network lines, a voice unit (phone), and the NGEN system.

The session will be presented by Karen Bedard, George Harris, Jeff Krause and Rick Lagueux of Convergent Technologies on Thursday, November 14, at the First International Conference on Computer Workstations.

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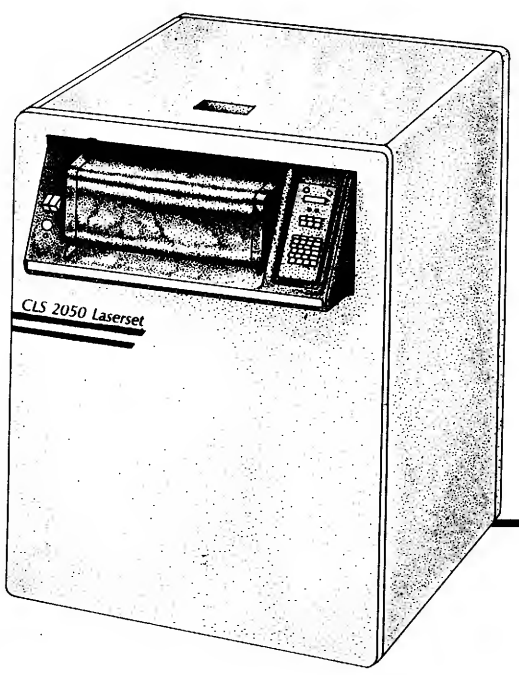

Math Samples

This sample tests the math fonts on the Laserset. Various selections are used from the TEXBOOK, by Dr. Don Knuth.

$x^2,\ x_2,\ 2^x,\ y_{x^2},\ 2^{2^{x^2}},\ ((x^2)^3)^4,\ ((x^2)^3)^4$

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Blurred Visions

continued from page 6

Aggravating Apple

As this issue amply illustrates, we are bumbling along, doing our typesetting on an H-P LaserJet, driven by my someday-available "MyType™" software. Wishing to remodel MyType to drive a more robust printer — how soon we become dissatisfied — I wanted to get an Apple LaserWriter. And, wishing to pay under the table, rather than through the nose, I sought Software Developer status and its accompanying discount.

After talking to half a dozen people, starting with Steve Jobs — a top-down approach — someone finally gave me to believe that I would be certified a Big Red Developer. A few weeks later, a mound of papers arrived with a cover letter from the Developer Group's Alain Rossmann stating, "Dear Macintosh Developer, The awaited day has finally arrived! You may now purchase Apple's new LaserWriter through our Developer Relations Program. To make things run smoothly for you, I have enclosed a copy of our updated [Developers'] price list, and an order form."

Foolish me — I thought this meant I was a Macintosh Developer and could purchase Apple's new LaserWriter through their Developer Relations Program for the indicated $4,200. I called to arrange details, was told by friendly Beth that all I needed do was send the order form and a check for the full price, and the 'Writer would be sent, shortly. I did so, and split on a two-week trip.

Company Checks Unacceptable

Several days later, I called for messages and was told that Apple would not accept company checks! They also couldn't figure out if I was a "certified Developer." I called and was told, haughtily, *(a)* they wouldn't accept my check without a credit check, *(b)* they wouldn't deposit it and hold the order until it cleared, *(c)* they wouldn't verify my credit with Steve Jobs or anyone else without a credit application — which I had thoughtlessly failed to take on the trip, and *(d)* they "sent out lots of those letters, but it didn't mean the recipient was a Developer."

Does Sculley's "businesslike, corporate approach" really include refusing company checks? Is it businesslike to refuse to let checks clear to cash? More importantly, is it businesslike to bureaucratically bludgeon those who would enhance Apple products?

I told 'em to forget the order — I wasn't buying a Pepsi. [Whine, gripe, grrrr!]

Correction re the LaserJet

In the last issue, I reported that, "The inexpensive toner cartridges that fit into the inexpensive Canon xerographic copies do *not* fit into the Hewlett-Packard LaserJet, even though it uses the Canon print engine. They have some wee tiny physical differences — and a $30-$40 price difference."

This is true, but the implication is false. Les Earnest and several others called to point out that *all* Canon-engine computer printers accept the same toner cartridge, though it is a different cartridge than is used in the Canon copiers. The difference is massive — not tiny — essentially, one unit writes the image, whereas the other erases the non-image.

I apologize to Hewlett-Packard for the snide, false implication. [Next time, I'll *double*-check my "facts," even when I get them from a supposed expert.]

DICK WILHELM
H-P
BOX 15
BOISE ID 83707

File-Cleaning Time

Have you heard that those who use Amdahal computers are known as "Amdroids?"

The Homebrew Computer Club had it's 10th anniversary last March. The first computer club to form in the U.S., it held its first meeting on March 5, 1975, in Gordon French's garage in unincorporated Menlo Park — attended by 32 people. How could so much have happened in so short a time?

When are we going to have a major, national, public convocation to address, in detail, the issues, problems and solutions surrounding proprietary software? Who's interested in seeing it happen? — please write; don't call (unless you're Bill Gates or Gary Kildall ... and are still speaking to me).

Last June, at the University of Michigan's School of Education in Ann Arbor, the ERIC Clearinghouse on Counseling and Personnel Services held a workshop on "Computer Enhanced Counseling." Ahhh, is nothing beyond the touch of computers?

In May, Palo Alto's Historic Resources Board voted unanimously to place a building on the city's inventory of historic sites — the first step towards similar recognition by the state and feds. The building was Bill Hewlett and David Packard's "first garage" at 367 Addison Avenue.

Berkeley's Yale Patt opines that university faculty should

continued on page 12

Programming Help from a Syntax-Directed Editor

An environment based upon a syntax-directed editor will be described in "The Engineering of an Environment on Small Machines," at the First International Conference on Computer Workstations. Some of the issues to be discussed include

user interface, design considerations for multiple machines and multiple target languages, and performance issues on a machine like the IBM PC.

Using a syntax-directed editor for enhancing program development activities in single language systems is currently under study at many locations. However, using such a system in an effective manner requires more than just implementing the latest technology. There must be a careful analysis of the requirements of the tool, and of the needs of the user, for effective utilization of the product. This session will describe one such implementation that tries to synthesize many of the existing ideas into an effective tool for productivity improvement. The current environment is designed for Pascal, but can be used to handle related languages like C and Ada.

This session will be presented by Marvin Zelkowitz, Jennifer Elgot, David Itkin, Bonnie Kowalchack and Michael Maggio of the University of Maryland. It is scheduled for Wednesday, Nov. 13 at 9 a.m.

Workstations'85 session

WINDOW MANAGING & MULTITASKING AT IBM

"The goal of a window management system is to give the user access to the full power of a multitasking operating system by allowing him to use several applications at once," said Michael J. Goodfellow of IBM San Jose Research. Goodfellow will describe "WHIM, the Window Handler and Input Manager," at the First International Conference on Computer Workstations.

WHIM is a window system being developed as part of the QuickSilver operating system project at IBM San Jose Research. Its function is to provide applications with several virtual displays, and to map these virtual displays to the real display. "In our architecture, the window manager does not format windows or interpret input to them. We have left these functions to higher levels of the user interface," Goodfellow said.

Goodfellow will compare some approaches to window management and discuss the reasons for the current architecture of WHIM. The effects of the display interface on the window manager will also be described.

The session is scheduled for 11 a.m. Tuesday, Nov. 12.

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TSC-16 Gazette 10/85

Workstations'85 session

Networked Stations Replace Time-Shared Mainframe

Powerful, inexpensive processors, low cost storage, and high-resolution color displays make networked, single-user workstations suitable replacements for the time-shared mainframe environment of the scientific and engineering professional.

Such a system of workstations is being developed in the Professional Workstation Project at the University of Illinois at Urbana-Champaign. Using the UNIX operating system, it provides powerful object-oriented graphics tools to aid the productivity of the user.

R. H. Campbell and W. J. Kubitz, of the University of Illinois at Urbana-Champaign, will discuss this system in "The Professional Workstation Project," at the First International Conference on Computer Workstations.

The presentation is offered Thursday, Nov. 14, at 11 a.m.

Blurred Visions

continued from page 11

consist of two groups — master's-terminal staff who can function as high-quality teachers, and Ph.D.'s ... who return after 20 years' experience in industry.

An example of creeping techno-verbiage, plus outlander provincialism: A Bay-to-Breakers racer from Dallas was being interviewed and commented that he, "came to California to get a megadose of wierdness." Thank yew very much, and how's your TI personal computer doing this year?

John Wakerley said, "The next start-up should be a university."

Someone recently proposed some self-contradictory phrases:

"market research,"
"holy wars,"
"military intelligence,"
and "computer science."

Periodic Lotus Functions

Finally! — A microcomputing company has produced a really excellent "house organ," a periodical focusing on its products. Edited by ex-*Byte* Editor-in-Chief Chris Morgan, *Lotus* magazine is a rag worth retaining.

It's makeup and content is at least equivalent to the best slick magazines in the industry. Its articles offer legitimate technical content; its ads support numerous Lotus-based add-on vendors in a praiseworthy symbiosis. It serves Lotus well — by serving Lotus users well.

More micro companies should yank control of their house organs away from marketing and p.r. hypes, and put it in the hands of high-quality technical editors — though the likes of Chris are hard to find. By serving courses of legitimate technical fare to their customers, they would serve their own interests much better in the long run — much better than most of the semi-useless puff pieces that parade as newsletters.

Of Glass House and *Gazettes*

Lest the critical reader conclude hypocrisy on my part, let me hasten to say that the *Gazette* falls somewhere between being a useful information medium, and a self-serving puff-piece — at least self-serving to the folks paying its production costs. But, considering its cost to the readers (zip!), the budget for technical writers (equally zip), and the issue-sponsors being served, perhaps that's not too bad.

The consciously planned organization of the *SGG*'s is to intermix "useful" information with "client material." The hoped-for result is a mix of information that fairly serves the

continued on page 14

In a world of polished hype, it is partricularly important to support high-quality service and technical knowledge when ya find it:

I recently researched several of the Peninsula's satellite equipment sources, was displeased by some, and delighted by one — TVRO Systems of Milpitas. They candidly offer a techno-junkie's level of expertise, congenial patience with hours of questions, careful installation, and excellent service and support. — *Jim Warren*

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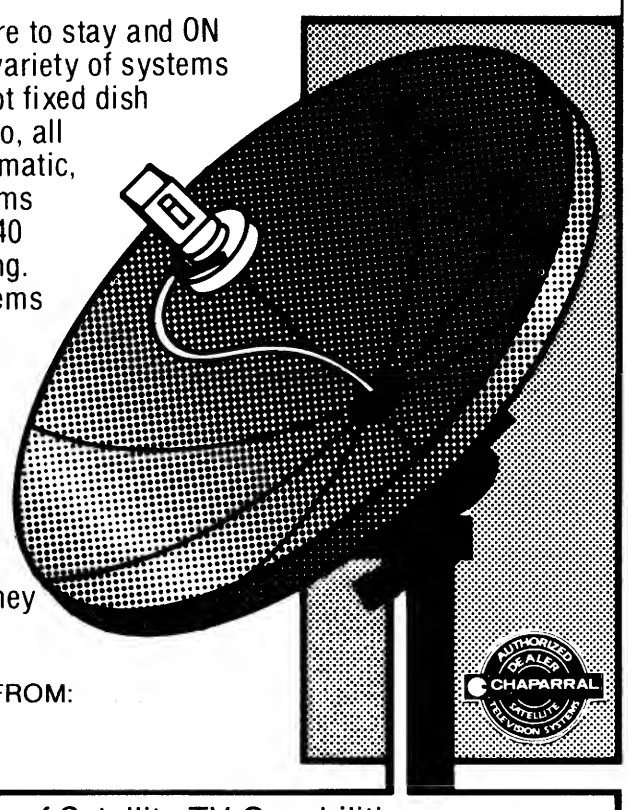

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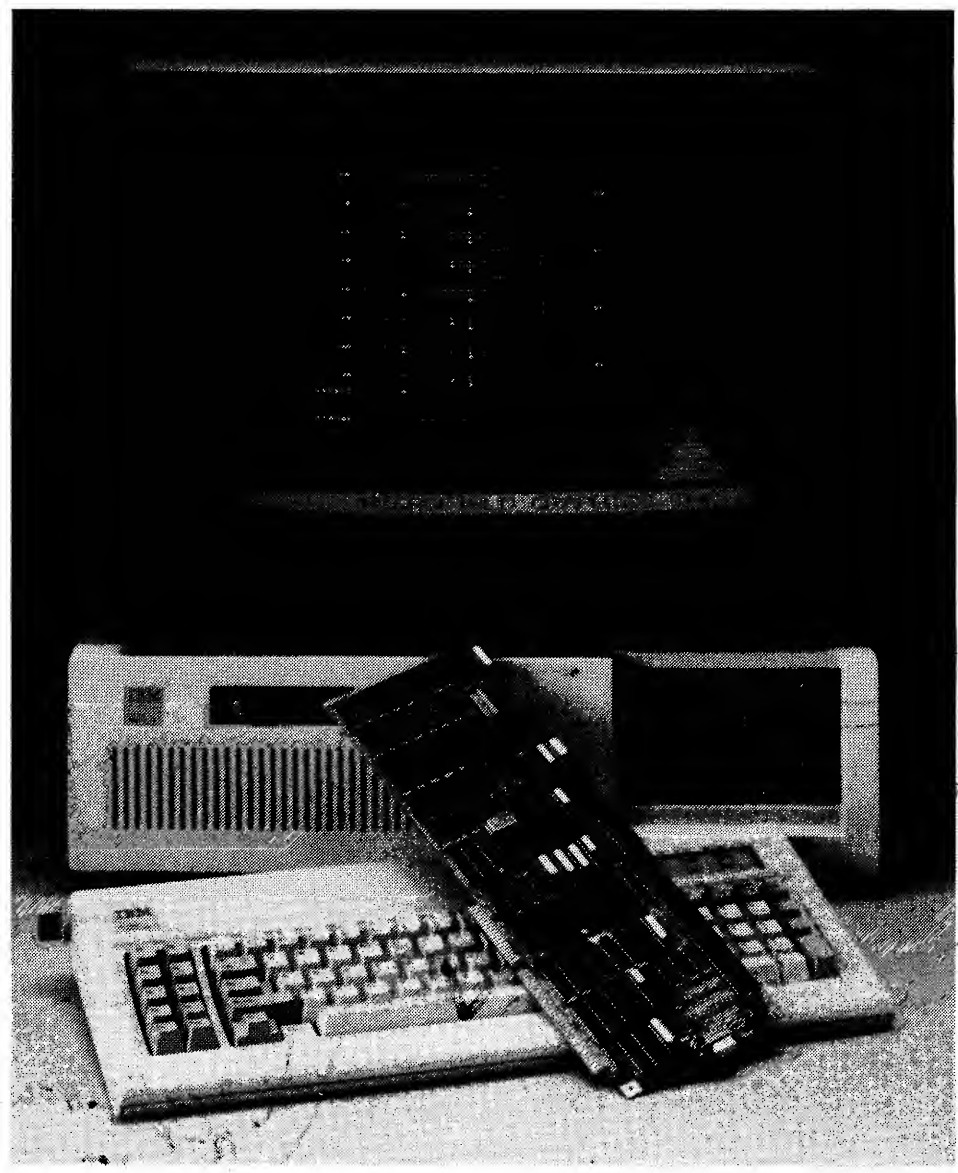

The T-4 Color Graphics Controller, a graphics engine designed for use on IBM-based personal workstations, was recently released by Microfield Graphics. The Controller makes bit-slice graphics possible on the IBM PC/AT.

Marketed to OEMs producing PC-based CAE and CAD/CAM workstations, the T-4 is optimized for applications that require high performance, flexibility and IBM PC software compatibility. The T4 provides resolution of 1024 x 800 pixels and writing speeds of more than 1 million pixels per second. T4 architecture is based on low-energy, CMOS bit-slice gate arrays that contribute both to performance levels and IBM compatability. Bit slice machine emulation allows users to run programs such as Lotus 1-2-3 and Wordstar on the same high resolution displays used for engineering applications.

The T-4 is completely microprogrammable. Microcode instructions are stored in Random Access Memory (RAM), and the most detailed workings of the product are accessible to developers with T4 Microcode Development Tools. Custom modifications may be microprogrammed, reducing OED time-to-market. Diagnostics and repairs are simplified, and the microcode form of system software produces fast applications performance.

Microfield VDI

Microfield has also released their proprietary version of VDI, Microfield Virtual Device Interface (MVDI). Providing the interface between the T4 Color Graphics Controller and the IBM PC/AT, MVDI allows users to draw device independent graphics and makes already developed graphics applications more easily portable from other computers.

Microfield's version of the ANSI standard is implemented in microcode to provide the benefits of standardization without performance penalties. MVDI may be purchased as a separate option and passed on to end users as part of applications software.

OEM Development Tools

Systems using the T4 may be created easily with the optional T4 Development Tool Kit. By making the microcode accessible, these development tools allow OEMs to create proprietary graphics applications rapidly. And their low-level implementation exploits all the speed advantages of microprogramming.

An IBM PC/AT with the T4 Color Graphics Controller installed and running an M/S DOS editor is included in the Development Tool Kit. Also provided are a T4 Simulator to confirm code functionality in software, source code for MVDI, bit-slice source code, a microcode assembler, linker and loader, and extensive debug and support tools. Programming guides are also provided.

Price and Availability

For additional information, contact: Microfield Graphics, 8285 SW Nimbus Ave #161, Beaverton OR 97005, (503)626-9393.

Workstations'85 session

HOW TO MAINTAIN ONE'S IDENTITIES

The automatic naming and maintenance of objects in an interactive workstation environment will be the topic of "Identifying Objects in Interactive Workstation Environments."

Traditional interactive programming languages require the user to do all the bookkeeping in the maintainance of global variables used in creating and manipulating objects. The complexity of interactive environments with global objects tends to create three types of problems: overloading, name-forgetting and value-forgetting.

A workstation system with a session manager will be discussed in this presentation. The session manager uses a hierarchy to organize and display significant data objects in the environment. It removes the burden of control from the user while still allowing full access to all the objects while eliminating the aforementioned problems.

This session is offered Wednesday, Nov. 13, at 11 a.m. It will be presented by Jay Glickman of Advanced Information and Decision Systems.

Continuous Simulation for Micros Offered in Combined Textbook-Software Package

TUTSIM is an interactive simulation program developed for continuous processes and physical systems. With it, a user can accurately simulate the dynamics of systems in a wide variety of applications. This program is designed to run on the IBM PC family of microcomputers (IBM PC/jr/AT/XT). It is exclusively distributed in the U.S. by Applied i of Palo Alto, California.

PWS Engineering, the engineering textbook group within PWS Publishers of Boston, has joined Applied i to offer a very reasonably priced TUTSIM-based instructional, consisting of a textbook and software. The publication is called *Building Dynamic Simulation Models on a Microcomputer: A Case Study Approach Using TUTSIM.*

Simulation Building Blocks

With TUTSIM, the user enters the model block by block. TUTSIM then "runs" the model, calculating the response of the model at each increment of simulation time. The user can easily and quickly change a parameter, a component, or a condition and run the model again. The output that results from each run is available for CRT display or printer.

Tutsim Book Offers Tutorial; Software Pack Offers Experience

The book/software package includes a basic book and user's guide that introduces continuous simulation, provides numerous case studies, and guides the microcomputer user through numerous TUTSIM-based simulations. The author, Dr. Adolph Smith, has long been active in development of simulation software. He has a broad background in physics, mathematics and electrical engineering, and has taught at the University of California-Berkeley, San Jose State University, Concordia University in Montreal, and Michigan State University.

Workstations'85 session

Computer Work at Home

Telecommuting — the ability to work independently of the traditional office — is a growing industry now covered by a new publication on NewsNet, the nation's largest distributor of specialized business newsletter information.

Telecommuting Report monitors the expanding field of telework, commenting on news and issues related to the trend towards location independent work made possible by "Information Age" technologies. NewsNet subscribers particularly interested in Telecommuting Report include program planners, prospective telecommuters, and marketers of products and services targeted to the telecommuting marketplace.

IC Design on a Desktop

The advantages of the workstation approach to integrated circuit design for "sophisticated CAD tool users" will be discussed by Dave W. Palmer and John A. Wisniewski of Sandia National Laboratories in their presentation, "Conversion of an IC Design Capability From a Mainframe to a Workstation Environment."

Palmer and Wisniewski will discuss the capacity and capability of the complete hardware, software and networking environment. The session will take place at 9 a.m. on Thursday, November 14, at the First International Conference on Computer Workstations in San Jose.

Workstations'85 session

INFO RETRIEVAL SYSTEM ORGANIZATION

A high-level logical system organization developed to support a wide range of information retrieval system requirements will be discussed by Lee A. Hollaar of the University of Utah.

The Utah Retrieval System Architecture, or URSA, was originally developed for the evaluation of different system features and algorithms, and to provide a contemporary retrieval system with a superior user interface.

The primary user interface is through a workstation capable of supporting multiple windows. The actual retrieval process is supported by a number of backend server machines, each providing a basic function. A resource allocation protocol takes requests for particular server functions and establishes the appropriate virtual circuit.

A prototype of the system has been operational since late 1984, implemented initially on an Apollo workstation environment. It includes a portable network-transparent communications system, built on top of existing virtual circuit systems and capable of providing both remote procedure calls and asynchronous communications for the user processes.

"A Workstation-Based Approach to Text Retrieval and Manipulation," will be presented at 9 a.m. Thursday, Nov. 14, at the First International Conference on Computer Workstations.

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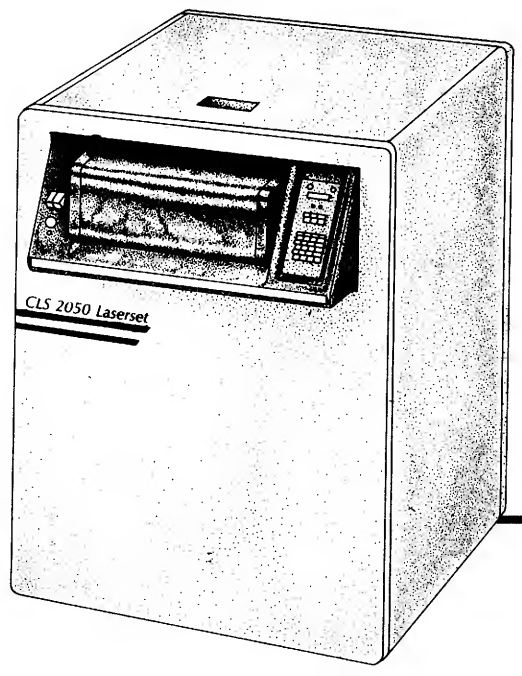

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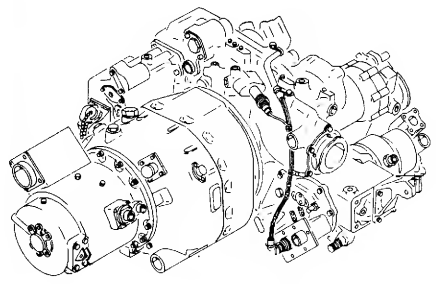

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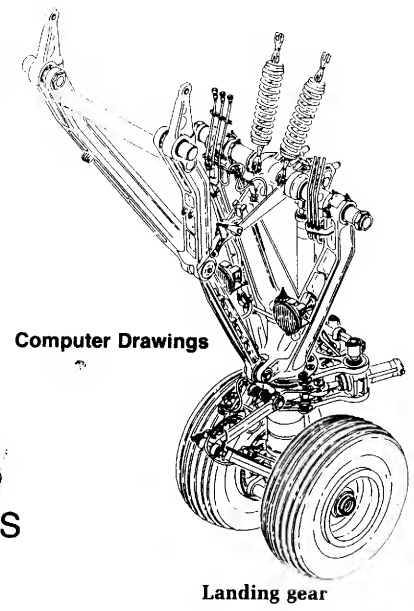

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Workstations'85 session

Communal Workstations

Creating a network of highly autonomous yet cooperating personal computer workstations using shared servers will be discussed by Rakesh Agrawal and Ahmed Ezzat of AT&T Bell Laboratories at the First International Conference on Computer Workstations.

Agrawal and Ezzat will present their design for augmenting the UNIX system with the remote execution capability that allows processes to be offloaded to the compute servers. It preserves the execution environment of these processes as if they were still executing locally at the originating machine.

The project, called NEST, provides processor sharing by creating a pool of compute servers that may be used by the workstations. Some processors are permanenty designated as compute servers. In addition, through an advertisement mechanism, any workstation may make itself temporarily available for a specific duration of time to be used as a compute server.

"Processor Sharing in NEST: A Network of Computer Workstations," will be presented Thursday, Nov. 14, at 9 a.m.

Computer Listing Service

A structured and comprehensive online database for buying and selling computer equipment is now available nationwide. Through Computer Multiple Listing Service (CMLS), computer brokers, dealers, and end-users can use their computer terminals to enter information on equipment they have for sale or search for equipment they need.

CMLS subscribers can quickly and easily find the equipment they need. The database lists manufacturer, model number, full details of system configuration, location, date available, price, and leasing terms offered. Subcribers can also search for equipment by "function" (disks, printers, etc.) or scan "What's new?"

For additional information, contact: Noel Tyl; TYL Associates (703)790-5500.

Computer-Aided Engineering — Systems Demos

For the first time, the IEEE Computer Society's Compcon'86 is organizing a variety of opportunities for hands-on experience with, and detailed demonstrations of, several computer-aided engineering systems — to take place during the Compcon'86 Technical Conference in San Francisco, March 3-6, 1986. This is not a "trade show" — less than a dozen systems will be selected by Compcon referees for detailed examination, based on their educational and professional interest to Compcon'86 attendees.

These demonstrations are being organized by Glen Langdon from IBM's Research Division in San Jose and Compcon'86 General Chairman, Ken Majithia from the IBM Development Labs in San Jose and Treasurer of the Santa Clara Valley Section of the IEEE, and Steve Miller from SRI International and past-General Chairman of AFIPS' National Computer Conference. For details, contact Dr. Langdon at (408)256-6454.

Blurred Visions

continued from page 12

non-paying subscriber and the low-paying sponsor.

Lowcost Support for Profession

This issue — and the next one, in early 1986 — were requested by the organizers of the IEEE Computer Society's Compcon. They were seeking inexpensive alternatives for spreading the word about the Society's only full-range annual technical conference. Later, the Workstations'85 organizers joined and are underwiting 3/4ths of this issue's costs.

I have served on the Compcon Program Committee for about half a decade. Because I support Compcon, and because I enjoy producing these fish-wrappers, and because I had some things I personally wanted to publicize, I agreed to produce these next two issues — essentially at cost. (All cost estimates were furnished to the publicity committees; verification and "shopping around" was urged.)

We agreed that the minor page-space devoted to my several topics plus a coupla ads for friends is fair compensation for the considerable effort it takes to produce these things — work well beyond my being a computer professional.

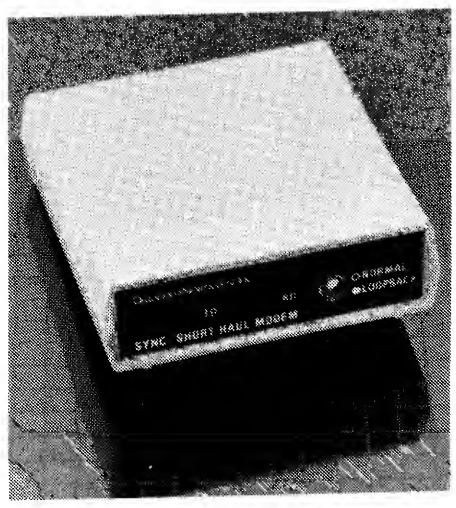
This is an experiment in mutual support. We hope you feel all parties are fairly served. Your views and comments are solicited.

— — — — —

"Let us stand on one anothers' shoulders; rather than upon one anothers' toes."

— Dennis Allison

SYNCHRONOUS SHORT HAUL MODEM HAS OPTICAL COUPLERS



Datacom Northwest has added a Synchronous Short Haul Modem to their product line to compliment their asynchronous model. The standalone is housed in the same low profile case. The PC Card from the standalone also fits their 16 card rack and 8 card desktop enclosure.

Typical applications include: telco lease lines, in-house cable systems, and local exchanges. Five selectable data rates from 1200 to 19,200 bps, analog and digital loopback, transmit and receive Tri-State LEDS and optical couplers are but a few of its' state-of-the-art features.

Available in 110v or 220v configuration, the unit has a one year guarantee and is available from stock. Priced at $159 for the standalone model, quantity one. For additional information, please contact: Datacom Northwest, Inc., 3303 112th St SW #100, Everett WA 98204 (206)355-0590.

Workstations'85 session

Creativity, Productivity & Response Time

The relationship between increased productivity and system response time will be explored by James T. Brady in "A Theory of Productivity in the Creative Process."

Early in the 1980's, large computing systems became capable of supporting response times of 300 milliseconds for transactions consisting of 500,000 instructions. In the interactive environments, this produced an unexpectedly large increase in the productivity of scientists, engineers and programmers using these systems in their problem-solving activities.

Using two models from cognitive research, Brady has developed an analytic model of interaction between the problem solver and his computational system. "The model predicts that improvements in system response time and data entry technology can produce up to eight times improvement over a conventional interactive system with one second system response time," said Brady.

Brady, of IBM Corporation, will give this presentation at 9 a.m. Wednesday, Nov. 13, at the First International Conference on Computer Workstations.

SEEING THROUGH TILED WINDOWS

A conference session focusing on the current work on tiled, non-overlapping window management featuring a constraint-based layout mechanism will be presented on Tuesday, November 12th at the First International Conference on Computer Workstations in San Jose.

The conference session, "Constraint-Based Tiled Windows," will be presented by Ellis S. Cohen and Lee A. Iverson of Siemens Research & Technology Laboratory, and Edward T Smith of Carnegie Mellon University.

Window managers typically provide mechanisms for creating, destroying, and arranging windows on the screen, using either the "desktop" or "tiling" models. The desktop, or overlapping windows allow the most freedom in arranging windows, but can become difficult to use when faced with a large number of windows over a short period of time. Tiling models avoid some of the problems which occur with the desktop windows, but, so far, such systems have provided relatively poor mechanisms for the user to control layout decisions.

With the constraint-based layout mechanism, the user can specify the appearance of individual windows and constrain relationships between windows, thus providing necessary control over the tiling process. Cohen, Smith and Iverson will discuss their constraint model as well as detail an implementation approach that would make use of those constraints to arrange windows on a screen.

— FOR SALE — Broadcast-Quality, Professional Video Gear

This equipment was purchased — brand new — around January, 1983. It has only been used to produce two video tutorials, each less than a hour in length, and for half a dozen or so 1-5 day shoots. Everything guaranteed properly operational. Prices in parentheses are new cost; following price are sale prices. There are NO SALES TAXES on this used equipment.

CAMERA, MONITOR & ACCESSORIES

Ikegami HL-79DAL Camera ($31,570) $25,250
Fujinon 14x9.5 Lens w/2X Extender ($4,617) $3,700
Fujinon Wide-Angle Adaptor ($977) $800
ITC Viewfinder ($1,873) $1,500
O'Conner-50 Fluid Head ($1,732) $1,400
Hirat Camera Mount ($145) $100
O'Conner Panhandle ($65) $50
Lisand Sticks w/ Spreader ($499) 400
Tripod Tube ($102) $50
ITC AC Power Adaptor ($468) $350
Nicad Snap-On Batteries (2) ($702) $550
Battery Fast Charger ($280) $200
Videotek color monitor w/spkr ($1,082) $900
Hitachi vo99 waveform monitor ($1,011) $800
Lee-Ray Crash Cart ($462) $350
Porta Pattern Chart ($225) $200
studio conversion kit: includes rear servo control, focus handle, flex cable, mounting clamp. ($714) $550

subtotal: ($46,524)	$37,150
TOTAL PACKAGE:	$35,300

VIDEO & AUDIO RECORDERS & MICS

Sony BVU-110 3/4" Video Recorder ($5,490) $4,400
Sony AC Power Supply ($474) $350
BK-112 Time-Code Card ($1,295) $1,000
ESE timecode rdr/generator ($989) 800
Cine-60 Dual Nicad Charger ($140) $100
Otari 5050B Reel/Reel Audio Deck ($2,200) $1,750
Electrovoice RE-20 Studio Microphone ($150) $100
Sony Wireless Microphone System ($2,965) $2,400
Tram Lavaler Microphones (2) ($341) 300

subtotal: ($16,674)	$13,300
TOTAL PACKAGE:	$12,600

VIDEO & PHOTO LIGHTING

Lowell 4-Light Tota Kit ($1,024) $800
Lowell 4-Light Omni Kit ($1,130) $900
Light-standard water-weights (4) ($73) $50
Lowell Reflector ($62) $50

subtotal: ($2,289)	$1,800
TOTAL PACKAGE:	$1,700

EXTRA STUFF

Power Sonic 20-amp Gel Cel ($66) $50
Power Sonic 4-amp Charger ($60) $50

subtotal: ($126)	$100
TOTAL PACKAGE:	free w/others

Terms: 100% down, $0 to pay.
Haggling: $100/hour
Prices are subject to change at the whim of the whimsical owner. To discuss purchases, contact: Jim Warren, (415)851-7075.

Computer Professionals for Social Responsibility

Computers are changing our world. Computers can bring us great benefits, making life easier, more efficient and safer. But computers also have the potential to do great harm. If they are used recklessly, without regard to their limitations, they could bring us 1984 — or start a nuclear war.

Computer Professionals for Social Responsibility is an organization of some 800 computer professionals in the United States and overseas. We feel it is the obligation of people in the computer field to help educate society about the potential abuses of computer technology. We try to bring to the public's attention issues relating to computer reliability, what computers should not be used for, and how computers contribute to the arms race. We are a non-partisan, educational, tax-exempt, non-profit organization.

We write and do research and public education on such topics as the computer system of the "Star Wars" plan; the Strategic Computing Initiative; the militarization of computer science in the United States; computers and privacy; computers and the First Amendment; and computers in the workplace. We want to engage the profession in a dialogue with the public on the responsible use of this powerful technology.

If you are concerned with how computers affect the society we live in, join CPSR. The annual dues brings you the quarterly CPSR newsletter; you can participate in a local CPSR chapter, work on projects and hear important speakers. And you can become part of a rapidly growing and important organization of professionals who are shaping the future and working to make computers truly beneficial for society as a whole.

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ELECTRONICS ENGINEERS FIND JOBS

Appropriately, electrical and electronics engineers are in the forefront of professionals who use computerized information to help find jobs. Through their professional society, The Institute of Electrical and Electronics Engineers, Inc. (IEEE), and its United States Activities Board (USAB), engineers looking for new jobs have literally at their fingertips a state-of-the-art, national job search system known as the Professional Engineering Employment Registry (PEER). And they can tap into it with confidentiality in the privacy of their homes, according to Diane J. Barney, head of the IEEE/USAB Employment Assistance Committee.

Available to job-seekers without charge, PEER allows individuals to put resumes on-line and, most important, to learn about job openings. For employers, who pay to use the system, PEER helps them determine almost immediately the talent that is available: when, where, and at what cost. In addition, employers can use the system to store announcements describing employee benefits.

A simple, three-step process is all that it takes to review job opportunities available through PEER. With a personal computer and modem, one dials the service number, (617)275-4112; presses the "return" key; enters the password, "PEER"; and presses "return" again.

In addition, a new, voice-sensitive feature is part of the service. It allows users to "talk" to the computer over the telephone. "This has turned every push-button telephone in America into a job bank," says Joseph Stacey, President of JobNet, the firm that maintains PEER for IEEE. Required are: the telephone number ({617}275-4462); a user number response ("200#, 225#"); and the "password number" for PEER ("7337#"). "You'll be speaking with 'William,' IEEE's talking computer," Stacey says.

IEEE/USAB, which established PEER a year ago, recently signed a new contract with JobNet, located in Bedford, MA; Reston, VA; and Santa Clara, CA. According to JobNet, potential users of PEER, through IEEE and other professional societies, number about 1.5 million.

For additional information, contact: P.M. McCarter at (202)785-0017. The IEEE is the world's largest technical professional organization, with some 260,000 members in more than 120 countries.

Comparing Engineering Workstations

Mark A. Linton of the Computer Systems Laboratory of Stanford University will present a collection of benchmarks designed to effectively compare engineering workstations at the First International Conference on Computer Workstations in November.

"Constructing benchmarks is difficult because they should be general enough to be of broad interest, but specific enough to be meaningful," says Linton. At the conference, Linton will present a collection of benchmarks for general-purpose engineering workstations that give a good aproximation of processor, graphics, file access, and multitasking performance while being small and simple enough to easily transport. "We have run the benchmarks on Sun-2, Apollo Domain DN320, VAXstation-II, and IRIS 14500 workstations," Linton says. The session, entitled "Benchmarking Engineering Workstations," will be held Wednesday, November 13th at 11 a.m.

Workstations'85 session

AN EASIER WAY TO HANDLE INPUT

"Object Oriented Input Handling With RIOs," will be explained by Kevin D. Gourley of Microelectronics and Computer Technology Corporation.

RIOs are Rectangular Interaction Objects — invisible objects that exist in the form of rectangular regions which may overlay each entity displayed on the screen. Their purpose is to handle all input events occuring within their region. The use of this approach yields a program interface for input that is easier to implement than the typical virtual input device models.

"An actual implementation of RIOs has shown that the concept can easily support real-time interactive performance for handling greater than 10,000 objects," Gourley said. "More objects can be handled with a few simple optimizations."

Gourley's presentation will take place at 11 a.m. Tuesday, Nov. 12 at the First International Conference on Computer Workstations.

— WANT ADS —

DIABLO 630: daiseywheel printers ($1200), forms tractor ($300)

ALPHA MICRO — powerful S100-based microcomputer time-sharing system with 64K-1MB memory, 6-32 user ports: AM100 CPU ($200), memory ($300/64K), user ports ($300/6), 10MB CDC cartridge drive ($1000), 90MB CDC cartridge drive ($3000), Wango dual 8" floppies ($200), extensive software (free with system). All or parts.

COMPUPRO: S100-based, 8085/8088 dual-processor systems with M/PM-8/16 dual-processor operating system and major software, memory size of your choice, dual 8" floppies, 20MB winchesters, almost new. 75% of the best price you can find.

MICROMATION MARINER: M/PM-based 4-user S100-bus system, four 8080 boards with 64K on each, 21MB Fuji winchester, 8" floppy, 3M tape backup, classy designer cabinet, recently checked out. $5,000

CAL.COMP.SYS.300: S100 system, 8080A, 64K (more can be added), two 8" dual-density floppies, C/PM software. $1,000

DATAMAC: 64K, two 5" floppies, as is (may work); C/PM,Pascal,Wordstar. $300

GE TERMINET: 120-column, 1200-baud hardcopy terminal, as is (might work). $200

S100 BOARDS:

Dual 68000 CPU, $300
Konan SMD-type disk controller. $400
Potomac Micromagic modem board. $200
Piiceon memory. $300/64K

MISC:

DTC Microfile memory board. $100
BDT ASF160 sheet feeder, as is. $100

OFFICE STUFF:

Correcting SELECTRIC typewriters. $300
XEROX 2350: reducing copier. $900
XEROX 2830: 11"x17" copier. $1000
DESKS: Metal and wooden. $100
FILE CABINETS: 4-drawer, full-suspension. $70

WALKIE TALKIES: five industrial-grade Wilson HH-464-D4 units and base station, remote phone interconnect, extra batteries, five rechargers. $7000 includes licensing

TYPESETTER — IBM ELECTRONIC SELECTRIC COMPOSER: like a typewriter but with memory, proportional horizontal and vertical spacing, justification, 20 type fonts (medium, italicand bold; 8 point to 12 point), a main workhorse unit for small print shops for decades (used for years to create People's Computer Company newspaper, Dr. Dobb's Journal, and years of Infoworld and the SGG). $4000

NEWSPAPER TYPESETTERS — AUTOLOGIC MICRO-5: computer-driven newspaper typesetters (the LA Times uses four — two on-line, and two as back-up), 1000 lines-per-minute, hundreds of fonts available, 6 point to 72 point in 1/10th point steps, characters generated on hi-res CRT, new cost is $60,000-$80,000 or more. One has 5MB winchester for font storage ($30,000, FOB Woodside, CA), other has 20MB winchester ($35,000, FOB Denver, CO).

MERCEDES SL's: sports coupes, gray '65 230SL ($12K), brown '70 280SL ($14K).

All items FOB Woodside, Calif., prepaid or COD. Some "as is"; some guaranteed to work. Call Jim Warren at (415)851-7075.

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Workstations'85 session

ADVANCED TELECOM AT IBM LABS

Antonio Ruiz of IBM Research Laboratory will present an overview of recent work on an audio and telephony subsystem for an advanced office workstation in "Voice and Telephony Applications for the Office Workstation."

This subsystem provided voice functions that allowed speech synthesis from text and speech digitization for storage and retrieval of voice. It also provided telephony functions for two telephone lines with several telephony features including autodial, autoanswer, progress tone detection, voice detection, and touch tone detection. The applications programmed for this subsystem used many other services, such as file systems, display managers for raster displays with windows, menus, mouse input, and network subsystems. Descriptions of these applications will be presented to show present and future research issues in this area, with an emphasis on a future integrated environment with networks that transport data and digitized voice. Future servers on the network may include voice servers, text-to-speech synthesis servers, and continuous speech recognition servers.

This session is scheduled for 2 p.m. Wednesday, November 13 at the First International Conference for Computer Workstations in San Jose.

DESKTOP PAGE READER FOR WORD PROCESSORS

CompuScan today announced a desktop OCR scanner aimed at dedicated word processing applications. Called the CompuScan PCS Model 220 page reader, the scanner offers high speed, simple operation, and an extensive complement of features.

The unit moves information from paper to electronic media, breaking through key-entry logjams. CompuScan believes that simple, two-button operation coupled with recognition flexibility will make the units easily justifiable for most offices.

The CompuScan PCS page reader scans a page in 30 seconds, 10 to 20 times faster than a typist can type. It recognizes all popular office typestyles, making it useful for a wide range of applications. Type sources may include typewriters, daisywheels, laser printers, inkjet printers, and letter-quality matrix printers. Using font architecture, the PCS can recognize an unprecedented number of typestyles selected from monospace, (standard typestyles), proportional, OCR-A and OCR-B, and matrix printer. Additionally, it handles right-justified text and intermixed line spacing automatically.

Plug-in cartridges adapt the scanner for the specific formatting and interface protocols required by popular word processing equipment such as IBM, Wang, Lanier, and CPT systems.

To simplify subsequent editing, sophisticated logic analyzes and automatically inserts word processing formatting codes; including paragraphs, start and end pages, tabs, indents, and decimal tabs, underscores, super and subscripts, centered lines, line spacing, margins and tab grid settings.

Another PCS scanner, the Model 240 adds the ability to capture images and to send bit mapped images to an IBM or IBM compatible PC host, along with recognized text. The combination of text and image scanning gives word processing operators control over a wide range of documents. The 240 costs $5,995.

The scanner's page handling mechanism accepts a broad range of paper sizes and types. It permits up to 50 pages to be scanned unattended, stacking the pages in the same order as read. The user simply pushes a start or stop button to operate the unit.

For more information on CompuScan PCS page readers, contact the Marketing Communications Department of CompuScan, 81 Two Bridges Road #2, Fairfield NJ 07006.

Announcing the first IEEE Computer Society series on DATABASE SYSTEMS

These five books contain essential information on Database Systems. Order this unique package now, and for a limited time only, receive a savings of over 30%.

Reliable Distributed System Software
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The reader of this tutorial can expect to learn what reliability is, what reliability techniques are used in the different areas of distributed system software, and how reliability techniques can be better applied across all areas of distributed systems software especially in the distributed operating system area.
CONTENTS: Overview of Reliability (hardware and software). Overview of General Distributed Computer Systems Research; The Communication Subnet: Logical IPC and Distributed Programming Languages; Distributed Control; Structuring Distributed Systems for Reliability; Summary Collection of Software Reliability Techniques; Database Areas; Case Studies of Reliable Systems.
ISBN 0-8186-0570-7: July 1985, 400 pp., list price $36.00

Database Engineering, Volume 3

This book binds together the four 1984 issues of the quarterly newsletter of the Technical Committee on Database Engineering. The issues feature such topics as: user interfaces, workstations and special purpose hardware, CAD/CAM systems, optical disks, spatial data management, comprehensive design environments now under development, early prototyping, and modeling transactions.
CONTENTS: A summarization of working group discussions at the second International Workshop on Statistical Databases; Engineering Data Management; Multimedia Data Management; Database Design Aids.
ISBN 0-8186-0672-X: February 1985, 262 pp., list price $32.00

Distributed Database Management
by J.A. Larson and S. Rahimi

This tutorial provides a thorough written description of the basic components of distributed database management systems, describes how each of these component works, and examines how these components relate to each other.
CONTENTS: Introduction; Transforming Database Commands; Semantic Integrity Constraints; Decomposing Requests; Concurrency and Replication Control; Distributed Execution Monitor, Communications Subsystem; Design of Distributed DBMSs; Case Studies; Glossary.
ISBN 0-8186-0575-8: January 1985, 678 pp., list price $36.00

Recent Advances in Distributed Data Base Management
by C. Mohan

By reading this text completely, the reader will be able to acquire a good understanding of the issues involved in DDBM. This tutorial assumes prior exposure to centralized data base management concepts and therefore is intended for systems designers and implementors, managers, data base administrators, students, researchers, and other technical personnel.
CONTENTS: Introduction; Distributed Data Base Systems Overview; Distributed Query Processing, Distributed Transaction Management; Distributed Algorithm Analysis; Annotated Bibliography.
ISBN 0-8186-0571-5: December 1984, 350 pp., list price $36.00

Data Base Management in the 1980's
by James A. Larson and Harvey A. Freeman

This tutorial addresses the kinds of data hase management systems (DBMS) that will be available through this decade. Interfaces available to various classes of users are described, including self-contained query languages and graphical displays. Techniques available to data base administrators to design both logical and practical DBMS architectures are reviewed, as are data base computers and other hardware specifically designed to accelerate database management functions.
CONTENTS: Introduction; Tools for Data Base Access; Coupling A Programming Language to a Data Base; Data Base Design; Data Base Management System Design; Hardware Aids.
ISBN 0-8186-0369-0: September 1981, 472 pp., list price $27.00

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DIRECTORY OF COMPUTER SOFTWARE

The 1985 edition of the Directory of Computer Software describes some 1,300 computer programs developed by more than 100 Federal agencies, including 730 programs from the National Energy Software Center (NESC).

The Directory is a unique source describing proven programs developed by Federal agencies — applications and graphics software, software tools, modeling and simulation programs — all made available to U.S. business and industry through NTIS. The Ada/Ed compiler (approved by DOD) and the DATAPLOT computer graphics system continue to be available.

Brief informative summaries describe each program and include program language and hardware requirements.

All entries are indexed by number, subject, source agency, hardware, and language.

To obtain more information regarding the Directory, contact: NTIS, Springfield VA 22161 (703)487-4650.

Workstations'85 session

SOME LESS OBVIOUS WINDOW FEATURES

In "Productivity Features in a Workstation Window Manager," James A. Hamilton of Apollo Computer will explore workstation features which can significantly increase user productivity.

"One of the major advantages of workstations is enhanced productivity," says Hamilton. "The productivity enhancement resulting from multiple windows is well known, as are the advantages of mice, pop-up menus, and so forth." In his session, Hamilton will explore less common features such as infinite transcripts, universal editing and soft key bindings, and will demonstrate their "unexpected power, especially when they are combined in a single user interface."